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INDEX TO VOLUME 74

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INDEX TO VOLUME 74

July to December, 1938

This is an alphabetical index of articles and discussions arranged by leading words. It contains occasional cross references. Names of authors and men who discussed the papers are also included. Details of society proceedings, including the titles of papers read, officers elected, etc., can be located in proceedings under Societies, Editorials, News of the State, Marriages, Deaths.

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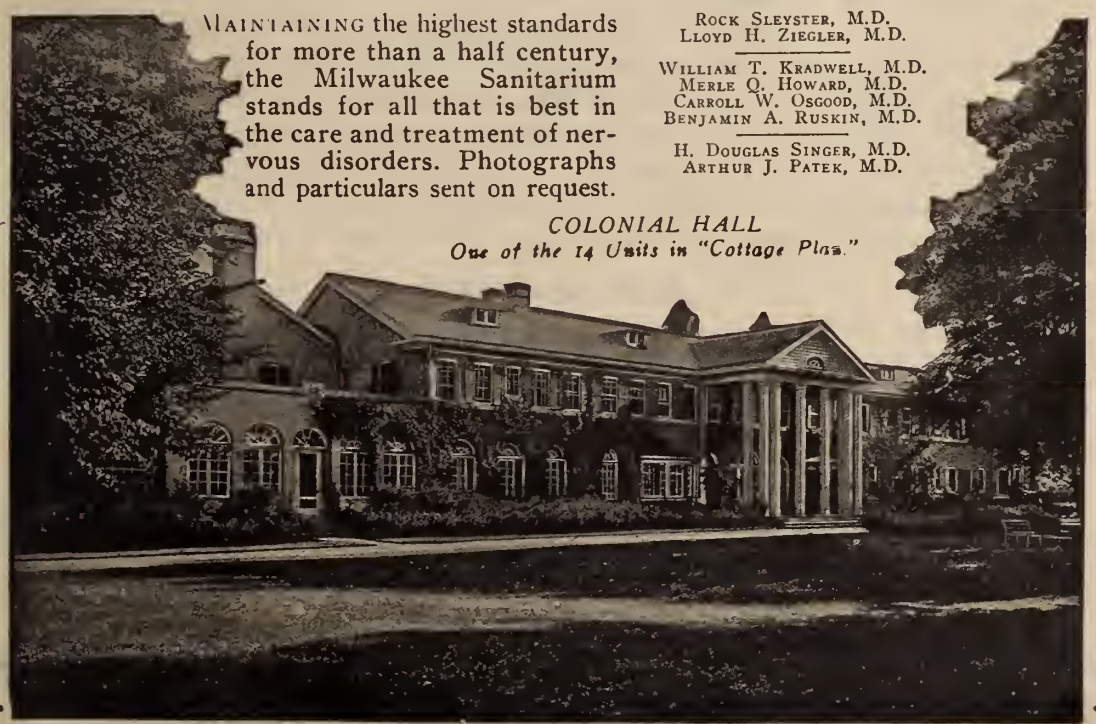
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BASIC OPERATIONS IN COMMERCIAL CANNING PROCEDURES

V. HEAT PROCESSING THE SEALED CONTAINER

● Previously, we have described how raw food material is sealed in the tin container after proper preparatory treatment. After sealing, the next important step in commercial canning is the heat process, or "process" as it is called in the industry.

Essentially, the processing operation involves exposure of the sealed container to hot or boiling water, or to steam under pressure, for the correct period of time. The purpose of the process is to destroy pathogenic or spoilage organisms which may be present on raw food material; the seal on the can then prevents re-infection of the foods by such organisms. Thus, the sealing and processing operations combine to insure a sound, wholesome canned product.

It is not possible here to review all factors which must be considered in the establishment of an adequate heat process for any specific product. Such factors have been briefly discussed in recent publications (1, 2). It must suffice to state that, in general, commercial processing operations are divided into two general types, depending upon the acidity of the food being canned.

The "acid" foods—including the common fruits and certain vegetables or vegetable products whose pH values fall below 4.5—are quite easily heat processed. With such foods it is only necessary to heat the sealed container long enough to permit the attainment of a definite temperature in the center of the can (usually 200°F. or slightly less). In fact, some acid products may be processed by filling sufficiently hot, sealing and inverting the cans, and cooling without further process.

The "non-acid" foods—such as meat, sea foods, milk and most of the common vegetables—require temperatures above that of boiling water for adequate heat processing. Such foods are processed under steam pressure in a closed "retort", usually at a temperature of 240°F. Years of research have made possible the issuance for the guidance of modern canners of a bulletin listing recommended process schedules for the non-acid products (3).

Regardless of the temperature of processing, equipment is available which permits use of the batch or "still" process, and the "continuous" or "agitating" types of process for sealed cans. Improvements in processing machinery and accessory instruments during the past two decades permit precise, scientific control of commercial processing operations.

Above all, however, the modern canner has a clear understanding of the underlying purpose of the process and a deep appreciation of the necessity for strict supervision of the processing operation. Commercially canned foods, consequently, must be ranked today among the most wholesome foods coming to the American table.

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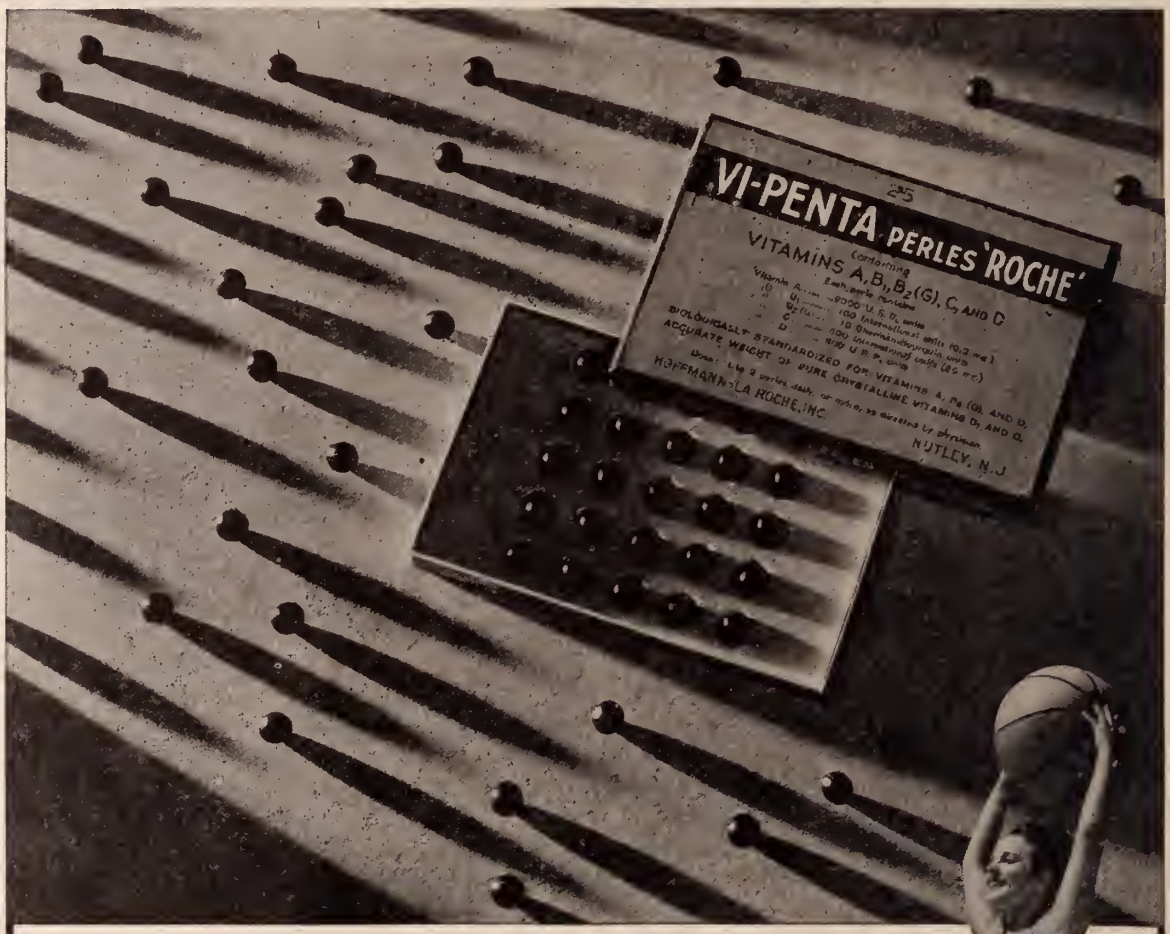
(1) 1938 Food Research 3, 13. (2) 1937. J. Amer. Med. Assn. 109, 1046. (3) 1937. Natl. Canners Assn. Bull. 26L, 3rd ed.

This is the thirty-eighth in a series of monthly articles, which summarize, for your convenience, the conclusions about canned foods reached by authorities is nutritional research. We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.



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THEELIN VAGINAL SUPPOSITORIES
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FOR ORAL ADMINISTRATION

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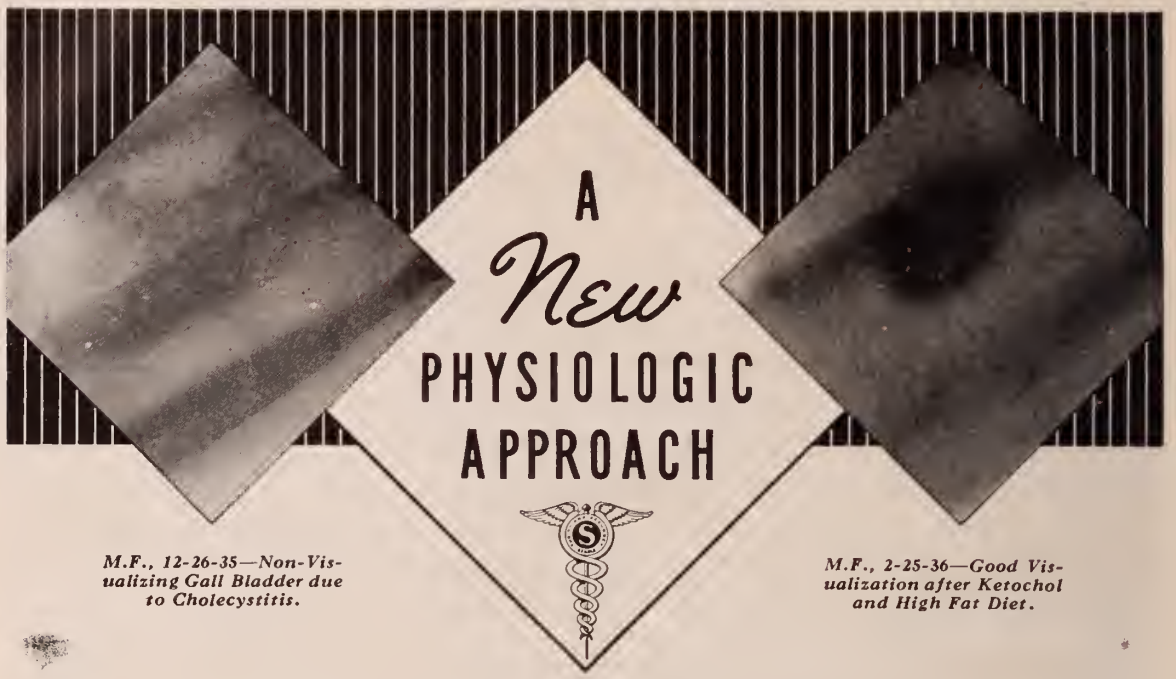
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3. Antispasmodic medication— to diminish irritability of the gastrointestinal tract.
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[1] Brown, Clarence F.G. and Dolkart, Ralph E., Jour. A.M.A., Feb. 6, 1937.

[2] Mock, Harry E., Brown, Clarence F.G., and Dolkart, Ralph E., S. G. & O., Jan. 1938, 66:79-87.

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1. "Treatment of Human Pellagra with Nicotinic Acid" — Fouts, Helmer, Lepovsky and Jukes; Proc. Soc. Exp. Biol. & Med.; 37:405: (Nov.) 1937.
2. "Relation of Nicotinic Acid and Nicotinic Acid Amide to 'Canine Blacktongue' " — Elvehjem, Madden, Strong and Wooley; Jrl. Amer. Chem. Soc. 59:1767: (Sept.) 1937.
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5. "Pellagra Successfully Treated with Nicotinic Acid — A Case Report." — Smith, D. T., M.D.; Ruffin, Julian M., M.D.; and Smith; Susan Cower, M.A.; Jrl. A.M.A. 109:2054: (Dec. 18) 1937.
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8. "Relation of Nicotinic Acid to Human Pellagra," an editorial, Jrl. A.M.A., 109:1203:1937 (Oct. 9).
9. "The Use of Nicotinic Acid in the Treatment of Pellagra,"— Spies, Cooper and Blankenhorn; Jrl. A.M.A. 110:622:1938 (Feb. 26).
10. "Advances in the Treatment of Pellagra." — Editorial, Annals of Internal Medicine 11:1760 (March) 1938.
11. "A Note on the Relationship of Porphyrinuria to Human Pellagra." Tom Douglas Spies, M.D., Yasuo Sasaki, Ph.D., and Esther Gross, M.S., Southern Medical Journal, Vol. 31, No. 5, May, 1938. Page 483.

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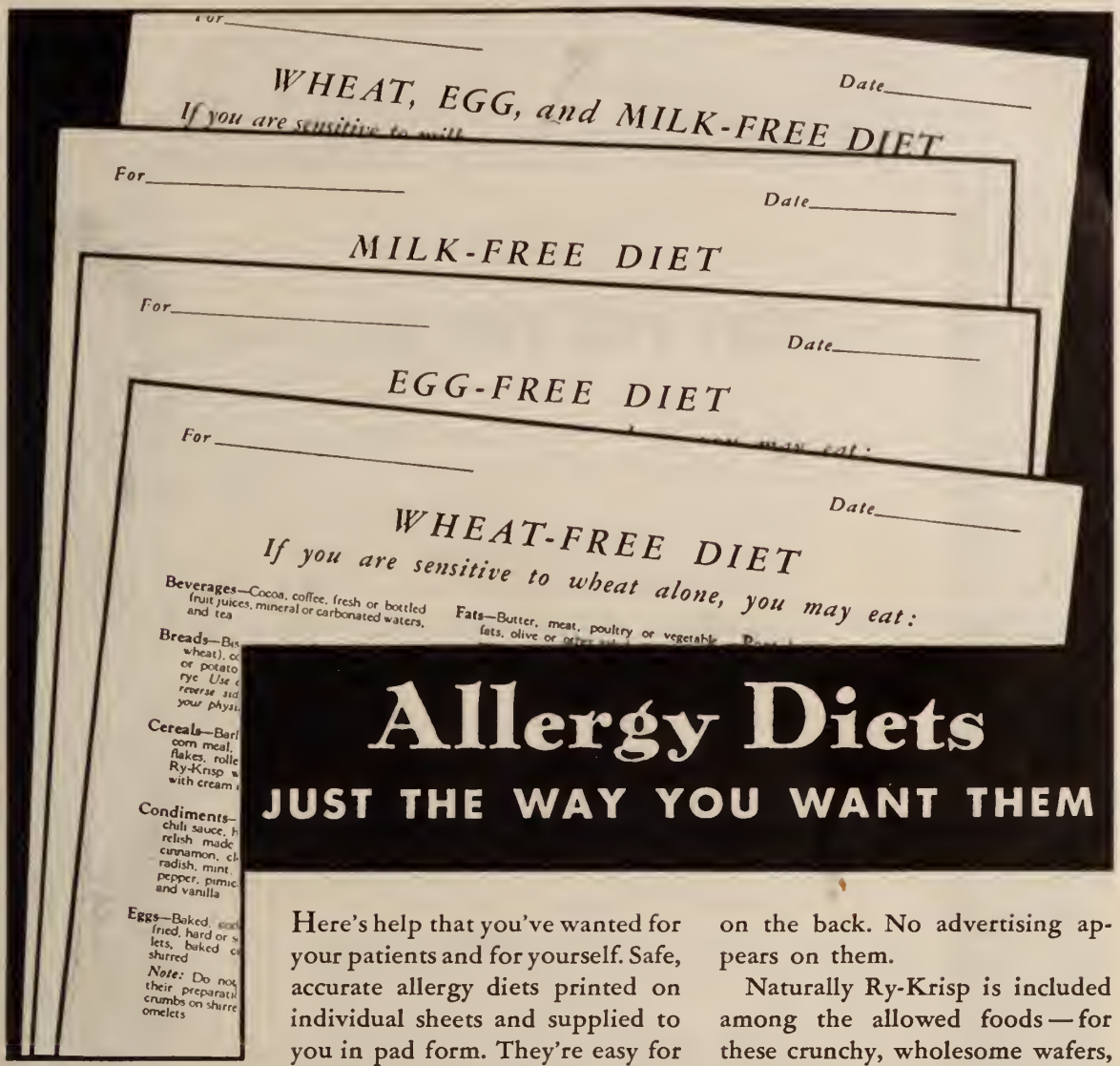
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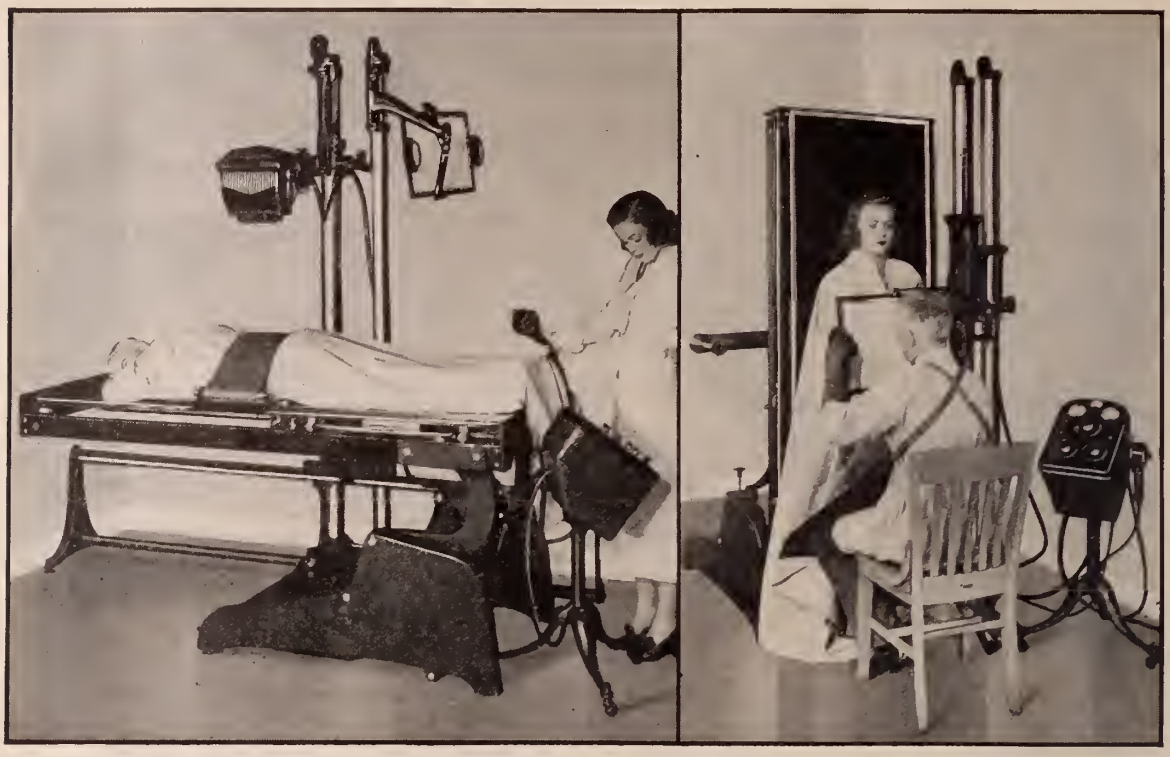
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BREAST SUPPORTS

An author* in the current medical literature, after reviewing the histories of 518 patients with carcinoma of the breast, gives the following practical suggestions which might prevent the development of precancerous lesions.

"1. More careful history-taking with an accurate analysis of the history . . .

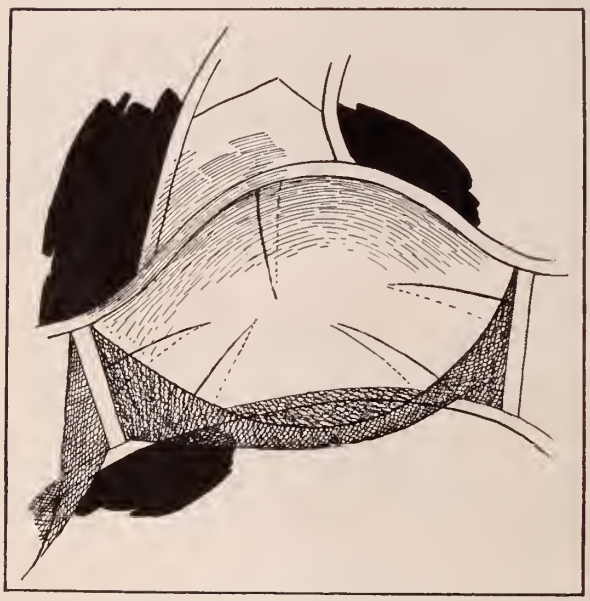
2. Education of mothers as to the necessity of nursing their babies . . .

3. If for any real reason the mothers are not able to nurse their babies, insistence on the use of a breast pump (preferably an electric one) . . .

4. More careful attention to the care of the nipples.

5. Correction of pelvic disorders especially when there is any pain in either breast during the menstrual periods.

6. More consideration to the proper support of the breast at all times."



Detail of pocket in bust compartment of opposite photograph (as seen from inside).



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* Surgery, Gynecology and Obstetrics, Vol. 65, September, 1937.

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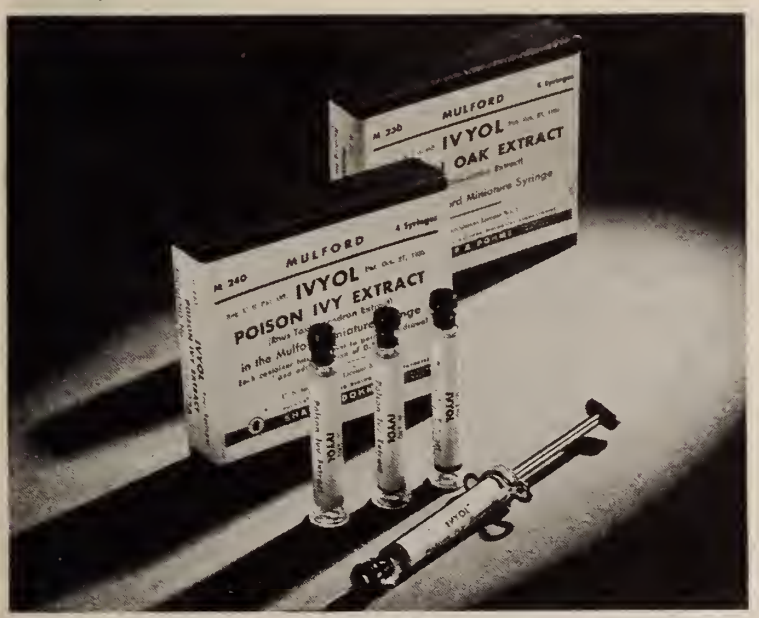
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Ivyol is available in packages of one and four miniature syringes. Each syringe represents a single dose.

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VOL. 74 OAK PARK, ILL., JULY, 1938 NO. 1

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EDITORIALS

COMMERCE IN CONTRACEPTIVES

Commerce in contraceptives evidences that the fabled "ounce of prevention" is truly well worth more than a "pound of cure" according to bank balances heaped from the results of this semi-legitimate, widely-propagandized but fallacious traffic.

Statistics compiled by a business publication in the United States that is both widely read and even more widely quoted declare that commerce in contraceptives amounts to some $250,000,000.00 per year.

Of this business something more than thirty-three and a third per cent (33⅓%) is estimated as the average straight profit to its vendors. This gamble with life and death, degenerates into a frenzied fracas with morality, among the results of which are that the legitimate medical profession to a greater or less degree stands, if not in direct competition, at least side by side with crime with purveyors of narcotics and informants as to the locales of shady houses or unfortunate prostitutes.

Life's battle to save itself—the secret instinct for survival is evidenced by the plain fact that there has yet been no positive method discovered either by science or by charlatanism that is an absolute prevention of conception, or what has pseudo-euphemistically been labeled as "birth-control."

Since the dawn of history this process has been held in opprobrium—though analagous evidence proves that "birth-control" as well as abortion, were familiars even to primitive man.

Physicians and most of the quacks, know in their secret hearts that there is no one hundred per cent efficient formula, device, method or drug available anywhere!

This new "feminine hygiene" masquerade of old prescriptions, whether of jellies or of washes, advertised the length and breadth of the land, and camouflaging either marital or extra-marital excursions into sex relationship with promise of no sequalae is pathetic to the point of high trag-

edy. The same authority from which the figures above were cited (i.e., "The Accident of Birth," page 83 of the February issue of the magazine *Fortune*) states that the "feminine hygiene" devices, instruments, powders, jellies, instruments and liquids total almost 700 brands—some 636 were the exact figures given—and that these cost American women at least $200,000,000 per annum. It is well known that not one of these aids to contraception has absolute therapeutic merit as either a venereal preventive or panacea and that many of them on the other hand, are "potentially dangerous" to the generative systems of women.

The Federal Food and Drug Administration has announced that since the sale of these "feminine hygiene" articles is supposedly for the prevention of venereal disease that all such merchandise must be scrutinized for quality as are drugs. Standards thereof in five states have been fixed by certain designated state agencies.

Of course, the condom section is the Goliath in the whole set-up, both from a standpoint of mass merchandise as well as for swollen profits. This part of the business is said to total some $38,000,000 per annum. The two largest firms so engaged, manufacture something like 250,000,000 condoms each year, at a cost of about a cent and a half each, but which are sold to the jobber for about $4.80 per gross or at a profit of something like 120 per cent, and this for the "quality-tested" product. But while the jobber usually sells them for about $6 per gross, or a profit of something like twenty-five per cent, when it comes to the ultimate consumer the retail druggist gets $24 for the same merchandise, or a profit of some 300 per cent; while there are frequent instances of druggists paying $1.25 for such merchandise, selling it for $24, and thus enjoying a profit of 1,820 per cent!

In the words of the popular song hit, "Nice work if you can get it." And one of the saddest parts of the picture is the type of moron who only too frequently *does* get it. Bell-hops, pages, elevator men, news-stand dealers, and doormen, are numbered in the squad, and their clientele of customers is of all ages and classes. It is of note that when a very widely circulated and long established and high grade periodical for women took a straw vote on the question last winter that the findings were against "birth-control."

Every physician of experience has seen frequent instances where limitation of family is desirable for the individuals themselves, for the individual homes and for the country. But these are not the instances in which this $250,000,000 business comes into its own. While the medical profession admits ignorance of the absolute, exact scientific procedure for prevention of conception—a prerogative that cheap commerce assumes when certainly it hath it not—yet the American Medical Association is doing its best to chart a course through the shoals of human weakness, both moral and physical, and charlatanistic cupidity. At the next meeting of the association report is expected to research done during the year by the committee appointed at the memorable Atlantic City convention in June, 1937, by the Council on Pharmacy and Chemistry and on Physical Therapy to "undertake the investigation of materials, devices and methods, recommended or employed for the prevention of conception with a view to determining their physiologic, chemical and biologic properties and effects, and that the results of such investigation be published for the information of the medical profession."

In the meantime some of the magazines on sale for a dime or less on every news-stand advertise alluringly and pictorially the *sine qua non* for a young girl's "happy vacation," a contraceptive kit that "fits in the purse."

THE MOST DAINTY AND MENACING OF DECOYS IS THAT OF THE MISLEADING "FEDERAL SUBSIDY"

The government seems determined to grab the practice of medicine by fair means or foul, and with a complete disregard of the situation's verities. This action emanates less from a high regard for public welfare than for a set purpose to despoil the American public both ethically and economically. Ethically by prostituting the national ideals and the national health. Economically by destroying the pursuit and practice of medical science as an entering wedge with which to achieve the complete socialization of American industry, of American arts and American professions and commerce. Washington's bureaucracy is looking backward to Russia instead of proceeding forward with Plymouth Rock.

There are various suave ways in which the

bait is spread for the unwary. The decoys are as dainty as they are dangerous. But the most menacing of all is that of the misleading "Federal Subsidy."

In order to gain its point the bureaucracy is willing, whether able or not, to subsidize anything and everything from medical research, hospitalization, maternity care, group practice and everything else all along the line, with any and all sorts of extravagant ideas, all springing from the central idea that the practitioners of medicine and the science itself must be made to yield to lay government control so as to be employed as an instrument of destruction for individualism, Americanism and science itself. Among the foreign nations where such subsidization has already taken place government control extends not only to the sort of medical care the people receive but also to the sort of medical education citizens may receive, and to the number of people who may study medicine. The drastic tyranny of this is perhaps unsuspected until it is connoted that this government control is not vested in scientific persons but most largely among the laity.

There is no exaggeration in the statement that one of the most dangerous of federal subsidies that could ever be extended to any industry or profession is that for which propaganda is now most active and which if it succeeds will turn over to the federal government the control and the standardization of medical schools. Through such subsidies and by the determination of curriculum and of administration of service the government would attain the right to practice medicine. The danger of putting the government in control of medical research becomes apparent when it is realized that since the governmental appropriation of three-quarters of a million dollars per annum for cancer control has been made, there are already other "suggestions" for the appropriation of other funds to "investigate" infantile paralysis, syphilis and other ills affecting mankind. And along comes another proposition which shows how desperately the government is out to "get" medicine. If this succeeds it will sound the death-knell of those magnificent institutions, the voluntary and nonprofit private hospital. For the government wants to subsidize these institutions in relationship to their laboratory, diagnostic and consultative services and by dangling before the heads of the hospitals and allied institutions the prospect of federal funds for clinics and dispensaries have blinded the eyes of otherwise sagacious men to the poison in the sweetmeat's center.

COMMERCIAL PLANS FOR GROUP HOSPITALIZATION HAVE BEEN GRADUALLY OVERSHADOWED BY NON-COMMERCIAL PLANS

The best news heard about the possibilities of perfecting plans that may produce a feasible system of group hospitalization is that indicated in the survey made by the Bureau of Medical Economics of the A. M. A., which reports that:

"Commercial plans directed by a sales agency that dominated the early organization of group hospitalization plans have been gradually overshadowed by noncommercial plans, particularly those including nearly all the hospitals in the community."

The bureau adds that the change is directly due to a radical change in the form of organization, of administration and of sales methods.

Local conditions and state statutes are responsible for the development of different forms of organization. This statement proves again what the editorial columns of this JOURNAL have been haranguing about for years. That is that doctors cannot afford to neglect the power of the ballot-box and that if the doctors do not edit the laws pertaining to the practice of medicine that there are plenty of others among the laity who will. It is the old creed of "Drive your business or your business will run you." Medicine must either attend to its business or of a surety the laity will do the tending.

When it was found that in some states the group hospitalization plans had to be incorporated under the state insurance laws, many of the doctors saw things in a new light and so, too, did some of the hospitals who were proponents of the scheme with an idea that it was the one lever with which to pull themselves out of bankruptcy. In still other states special enabling acts permitted the incorporations but *to a greater or less extent the state insurance laws still exercised authoritative control.* In still other states group hospitalization got by with more or less technical if not medical murder by forming as membership corporations under the laws relating to benevolent, educational

and miscellaneous associations. Since the problem of organization is bound to be complicated by state laws, the road travels again in a circle. Such organization should be subject to laws under which the medical profession is held subject, or made directly responsible to the medical profession itself. Control over patients, hospitals and physicians and their mutual relations should be vested, if not in the individual physicians merged into a functioning body, most surely under the organized ethical medical societies functioning under the American Medical Association and correlating with the American Hospital Association. The work of hospitals is not to be decried. Yet the average sick man can get along further and faster without a hospital than he can without a doctor. Hospital efficiency has been American medicine's greatest helpmeet, but hospital superefficiency, when it verges towards hospital supersedance of the practice of medicine, is but another instance of the pathetic tragedy of the tail attempting to wag the dog!

THE DEAD HAND OF AUTHORITY

Sometimes authority leads on the wrong track. That is, a view originated by a great man, which really is not correct in conception, is followed blindly for years and from proceedings from wrong premises may lead to various misconceptions. This may be, and probably is, going on still. More commonly, however, the dead hand of authority stifles that inquisitiveness which is the breath of life to research.

Sir Walter Langdon Brown gave an address to the North London Medical and Chirurgical Society, January 20, which was published in the *Lancet,* January 29. This address is a masterly review of the course of medicine, emphasizing how authority has sometimes impeded the progress of medical science for centuries. Witness that of Galen and there are many other instances of authority smothering fresh ideas and new theories. It has ever been the lot of the innovator to be greeted with ridicule, opposition and indifference. The older men of the profession are conservative, age is conservative; the young are the radicals. The middle-aged, as a rule, object to being bothered with novel views and will not trouble to look into them. They feel too old to learn and prefer to follow accepted views hallowed by tradition. The path of the originator is thorny. However, as the *Lancet* says editorially, the struggles that every new and good idea has to go through before it is established, and which Sir Walter deplores, are its stimulus; they make it grow strong and clear and influential; there is nothing like opposition for evoking the best effort from an idea or, which is the same thing, from its protagonists.

Again, if a new idea or theory is based on a sure foundation it will survive and bear fruit; whereas, if it is inept and useless, authority will sift its qualities and crush it, and this is all to the good. On the other hand, there is a great deal of sound reasoning in Sir Walter's argument. There may be too much authority showing its dead hand and it is well that the matter should be discussed in the clear manner in which Sir Walter has discussed it.

Medical Record 3, 1938.

OTHER FACTORS: LESS WELL KNOWN VITAMINS

Some of the nutritional factors that C. M. McCay, Ithaca, N. Y. (*Journal A. M. A.,* April 30, 1938), includes in his discussion on nutrition are factor H, miscellaneous growth factors, vitamin K and other blood clotting factors, gizzard erosion factor, vitamin P, nicotinic acid and toxic substances. The description of these substances is scattered throughout the vast literature of biology. Many more have probably been missed than have been found. Such substances may seem of little importance at this time, but who can say when the needs of some insect with specific requirements may provide the key for studying the vitamin physiology of higher species? These ramifications of nutrition are well illustrated by the discovery of Trager and co-workers that a factor essential for growth of mosquito larvae is present in normal human urine but deficient in that of pernicious anemia patients. The science of nutrition is slowly extending to include more animal species. Each species that is included leads to the discovery of new vitamin requirements and specific reactions to mixtures of feedstuff. However, this broadening of the base must lead to a more complete science capable of providing generalizations with more certainty. Finally the need for better systems of naming new vitamins is obvious.

PENNED

Say it with flowers,
Say it with sweets,
Say it with kisses,
Say it with eats,
Say it with jewelry,
Say it with drink,
But never, no never,
Say it with ink.

—*Siren.*

MEDICAL ECONOMICS

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The new heading of this column shows that the members of the committee have been little changed from last year. The name of Dr. Ripley of Galesburg has been added and in view of his interest in economic problems over many years we expect great help from him. This year as in the past, each member of the committee will pay particular attention to some phase of the medical economic problems and be prepared to discuss that subject authoritatively when so requested. In addition every member will have the opportunity to present an article or articles on the particular subject in which he is best prepared.

The organization meeting of the Council brought no new problems to the attention of the Illinois State Medical Society. The present pressing problem appears to be the organization for and the pushing of the *survey* requested by the American Medical Association. This will take considerable time and energy on the part of the officers of the component county societies, aided by the Councilor of his district and a special representative of the Illinois State Medical Society who will soon be appointed to supervise this work and expedite it whenever possible.

Two articles are presented in the Column this month, both written by the laity. The first is one written by a "clocker" present at the door of the Hall of Health in Springfield. The reactions and ideas of this individual disclose to the medical profession the way this, our latest endeavor, appeals to the laity. It is only by knowing how our work can be made interesting to the public, that we can continue to draw crowds to our educational exhibits, and it is for that reason this article is presented, in practically the same form it was presented. The name of the author is Miss Georgia Ann Saylor of Springfield, Illinois. The second article is reprinted from *Nation's Business* for June, 1938, with the permission of the Editor, Merle Thorp, as well as the author, Frederick De Armond. It is titled "Socialized Medicine Is a Reality." It is most interestingly and convincingly presented and coming from a lay writer should make all of us realize that there is a definite plan under way for the socialization of medicine, and that it is much more comprehensive than most of the medical profession have heretofore admitted. We wish to thank both the writer and Mr. Thorp for the permission of reprinting this article in the Illinois Medical Journal.

E. S. Hamilton, Chairman.

A LAYMAN GOES TO THE HALL OF HEALTH, MAY 17-21, 1938

To see and hear about the danger of disease to the human family was the popular and profitable thing to do during the work of May 17 in the Elks Building at Springfield, Illinois.

The Illinois State Medical Society with the State Department of Public Health co-operating considered it a proper time to provide the general public an opportunity to view more than fifty impressive exhibits on the subject of preventive medicine, and obtain information on health questions in an up to the minute and understandable form.

The attention from the laity given to this innovation, was all that the sponsors could wish for. More than seventy-three hundred persons from every walk in life came to see and remained until the closing hour of nine P. M.

Parents, teachers, salesmen, clerks, students and industrial workers passed through the Hall of Health and the addition of several hundred school children from the grade, high, and parochial schools of the city, as well as from schools from adjoining countries.

The understanding manner in which public health information was presented by means of charts, maps, movies, literature, files, radio-

graphs, drawings and photostats, was a liberal health education as well as an interesting one.

Upon entering the Auditorium, visitors were attracted by the huge detailed map with its reflector buttons and lights, showing where health educational service is given to a widely spread radio audience in the State.

The caption above this exhibit (A Medical Society Informs the Public) caused one appreciative onlooker to exclaim, "I would say they were telling the world a darned good health story." That was one of its many fine educational purposes.

Most of the outstanding diseases that man is heir to, pneumonia, diphtheria, scarlet fever, cancer, syphilis, smallpox, tuberculosis and diabetes, by exhibit units, which portray the activities of the medical profession and the State Department of Public Health were presented in such manner as to be easily grasped by the lay mind; likewise questions of nutrition, personal hygiene, mental health, recreation, all of them subjects of intense interest to the general public.

These exhibits showed the work done in the field of public health. One who was interested in knowing how the visitors reacted to the field of health educational material roamed the Hall with various groups and asked them this question, "What specific exhibit interested you most and why?"

The middle aged woman of the home and of the business world, thought the cancer exhibit outstanding and explained that she read the daily newspaper health column regularly in order that she might learn what cancer research has discovered in the cause, prevention and cure of this disease.

A teacher of a group of eighth grade pupils, after taking them through the Hall once, brought them the second time to view the sight saving demonstration explaining that in her opinion, its message was invaluable to the school children. Hundreds of children of all ages were fascinated by the display of objects, coins, pins, nails, etc., removed from the air and food passages of patients of varying ages by means of the bronchoscope and the cosphagoscope. This exhibit, by the University of Illinois College of Medicine, Department of Bronchoscopy, received their rapt attention which was partly explained by one lad gravely confiding that his baby sister had swallowed a safety pin once, and now he could see how she might have looked inside before the pin was removed.

The mechanical material, such as the dioramas of individual health, by the American Medical Association, rated high in the school child mind, also the booth display "Progress of Scientific Medicine in the Small City of Pinckneyville," in southern Illinois, drew and held his attention. It depicted in three scenes how a small community brought its population up with a minimum of illness from five hundred persons to more than three thousand by adopting health measures, such as, modern filtration and sterilization plants, as well as vaccination for smallpox and immunization against diphtheria.

The children were on solid ground here because these drawings were prepared by the grade and high school pupils of Pinckneyville. It was learned from these young folks, who are the citizens of tomorrow, that they greatly desire to be healthy, first because they are learning they must have strong healthy bodies in order to have clear minds, with which to do their work in the world. The second reason given revealed that many of them wished to be champions in the various fields of sports and they must be well to be fine athletes.

An intelligent mother confided that she was sending her fourteen year old daughter to learn some facts of life, as portrayed by the exhibit embryology. She had visited a book shop the day before and not finding what she considered suitable material on this subject had been advised by the salesman to visit the Hall of Health.

"This is not only a fine collection of public health material but conveys a message definitely to the business man as related to the economic situation," said a general manager of one of the largest insurance companies in the middle west. He was studying the maps and charts prepared by the Illinois State Planning Commission. These presented data showing existing facilities for the treatment and prevention of disease in the three major portions of the State. Public reaction to the booth where the Department of Medicine of the University of Chicago, by photographs, drawings and photostats, told the story of syphilis, might be summed up in the terse statement of a clergyman, who said, "The sooner the public gets behind public health effort against this disease, the sooner will great reform take place in the health of the human family."

It is a fact that many visiting teachers explained they were instructing their young classes in the elementary rules of social hygiene.

Interest in the exhibit of the Illinois State Nurses Association could best be understood by seeing at this booth the movie "Nurses in the Making," and the twelve charts, "Survey of the Nursing Profession in Illinois." The high school senior girl lingered long at this exhibit as well she might for the posters and maps alone were inspirations to the young woman who plans to make nursing her vocation.

These are only a few of the many expressions of approval of the idea and purpose of the Hall of Health by the public. Folks returned for a second and third visit to study some one feature or subject of an exhibit.

Free copies of *Hygiea* magazine were eagerly accepted by visitors at the exhibit of the Woman's Auxiliary to the Illinois State Medical Society. It was interesting to discover that the laity regard this publication as particularly their own and edited for them, and next to the Public Health News Column in the daily newspaper, was the most widely read.

Officers and members of welfare groups, Y. W. C. A., Parent-Teachers, civic, social, as well as religious groups, all studied a display of posters, transparencies and mechanical material at this booth, showing progress through education in the promotion of public health.

That there were dentists in the making at the Hall of Health among the boys from junior colleges who are studying pre-dental courses, was shown by the large number asking to be directed to the dental exhibits.

It was was a revelation to see how anxious the public is for health assurance from authoritative sources. What better way then, to present it to them, than a Hall of Health.

Miss Georgia Ann Saylor,
Springfield, Illinois.

SOCIALIZED MEDICINE IS A REALITY

The American people never have voted to change their system of medical care to one in which the doctors work for the Government instead of for their patients. Their representatives in Congress never have voted such a change. Nevertheless, the first steps in that transition already have taken place. Whether we like it or not, we have the beginnings of state medicine in this country and taxpayers' money is paying for it.

Original blueprints of the Great Plan called for universal health insurance as a part of Social Security. But its vast scope and gigantic cost, not to mention determined opposition from the medical profession and the lay public, made it necessary to attempt this reform by indirection. Evidence that it had not really been shelved came last year in an inconspicuous news report that employees of the Federal Home Loan Bank Board had formed a Group Health Association to provide all needed medical care for the group. The F. H. L. B., through its director, had pledged $20,000 of public funds as a share in the support of the movement which the Government was to bear. The balance was to be paid monthly by the members. A like amount was promised for 1938. (See Nation's Business, November, 1937, "The Taxpayer Pays the Doctor.")

Then, down at the Capitol, Senator McCarran of Nevada wondered how the Government could thus be committeed to so radical a departure without as much as a by-your-leave from Congress. To be sure, the G. H. A. was cloaked with the sacred vestments of employee welfare. It was merely a movement initiated by the employees of this one agency and no one else was to come in on it.

But the Senator knew that in Washington precedents of this sort spread like Russian thistle, that if one independent bureau could get the Government to add part of the cost of doctors and hospitals to the salaries of employees, others could and would follow suit. From that it would be but a step for the taxpayers to provide free medical care for Government employees, and another step for it to be offered to all citizens.

So he asked the General Accounting Office if this action was according to Hoyle.

R. N. Elliot, Acting Controller General, studied the matter closely and gave an official opinion. The diversion of this money, he said, was "without authority of law." All such disbursements must be authorized by specific appropriation from Congress, he averred. Incidentally, the Controller General's statement disclosed that, instead of $20,000, the amount so spent by December, 1937, was $37,000—nearly as much as the Home Loan Bank Board had promised for

Nation's Business, June, 1938.

two years. (All this took place while Congress was debating the abolition of the Controller General's office.)

Later the Group Hospital Association came into conflict with the District of Columbia hospitals which refused to permit the use of their facilities for operaions by the G. H. A. doctors because they disputed the legality of the organization. The Washington Medical Society also opposed the plan. At that time the G. H. A. boasted some 5,000 members in 19 government agencies. Another organization, the Committee for Co-operative Medical Service, had flung its banner to the wind.

In the meantime, other events indicated that the Administration is irrevocably committed to a program leading to socialization of medicine. Most significant in its implication was a speech delivered by Senator Lewis of Illinois before the 1937 convention of the American Medical Association The Senator made it perfectly clear that he was the personal emissary of President Roosevelt and that he was there for a serious purpose. Among other things he told the doctors:

The question for you doctors is not whether you like it (the proposed new status of the profession) or whether you don't . . . All your past has been that of the doctor and his patient and that won't do. We know nothing about a patient, don't recognize his existence; it is your creation.

In another direction—through its relief agencies—the Government has taken the country a long way along the road that leads to state medicine as practiced in Germany, Russia and other European nations. Medical care administered through the T. E. R. A. in New York alone cost $2,487,000 in 1936. W. P. A. health service in the Empire State was reported to have increased by 35 per cent, last year.

To assemble facts which would justify going the whole route with the original plan, the U. S. Public Health Service embarked in 1935 on a National Health Survey. The W. P. A. co-operated to the extent of $4,000,000 in a house to house canvass of some 800,000 families in 19 states—an enormous job. The findings published recently in four preliminary reports seemingly are advanced as proof that the medical profession is not rendering a satisfactory service to society. But a calm analysis of them fails to conform this supposedly urgent need to regiment the doctors.

A REASON FOR RELIEF ILLNESS

Much is made of the disclosure that both frequency and duration of disabling illness are decidedly higher among relief families than among non-relief. Investigators found 234 cases of illness disabling for one week or more per 1,000 persons in families on relief and only 174 among non-relief families with incomes of $1,000 a year or less. The average for all incomes was 172. Duration of illnesses also is longer by 67 per cent among relief families than among non-relief.

Instead of charging all this difference to the low economic status of the relief population, is it not more reasonable to conclude that those who are receiving free medical service through the relief agencies report more illness and stay abed longer by reason of it than those who pay for this service and whose income stops when they do not work? That is precisely the experience of countries that have adopted state medicine for their whole.

In 1933 it was found in England that those who carried government health insurance lost an average of 12½ days per worker compared with nine days before health insurance was made available.

In Germany, where compulsory health insurance has had a much longer experience, the annual time loss for sickness has increased in 50 years from five days to 28 days. On the other hand, the average for all non-relief classes in the United States, according to the new Public Health survey, is 9.8 days and for those on relief, 16.3 days.

When it comes to its statistics on treatment by physicians and on hospitalization, the Public Health Service fails even more completely to sustain the claim of negligence by the medical profession in taking care of the indigent. The survey shows that 70 per cent. of all cases of illness among relief families were attended by a physician. The proportion among non-relief cases where the income was $1,000 a year or less was 72 per cent. while the percentage for all income classes was 74. Surely no one is justified in reasoning from these facts that doctors are neglecting the poor.

The proportion of disabling cases hospitalized was 26.8 per cent. among relief families,

23.9 per cent. among non-relief families under $1,000, and 27.1 per cent. for all income classes. Relief cases received more hospitalization than the lowest-income non-relief class, and practically the same as the average for all non-relief. Further, the showing on hospital cases per 1,000 persons is even more favorable to the underprivileged: Relief families, 62.8; non-relief under $1,000, 41.5; all incomes, 46.7.

DOCTORS ARE NOT UNANIMOUS

Doctors, like business men and farmers, are divided on the issue of paternalism. A considerable minority favor it, if we are to accept the results of a survey among the profession made by the American Foundation, established by the late Edward W. Bok. A small group actually welcome socialization, while others favor limited control that will preserve the essential conditions of private practice. Many who do not relish it take a defeatist attitude.

Complete socialization of medicine would appear to be inevitable only if doctors surrender to it. But those who have their heads set on this move possess subtle means of overcoming opposition. Senator Lewis spoke at Atlantic City of doctors treating cases and sending their bills to Uncle Sam. It's the same bait in another guise as that offered to farmers when they are asked to sign crop control contracts with checks to follow. Both are offered a small guaranteed income in return for a surrender of liberty of action. In the case of the doctors an humanitarian appeal is added.

The doctor with a slender, precarious practice is offered a chance to take immediate cash and let opportunity go. One doctor wrote a letter to a New York newspaper. There are, he wrote, 6,000,000 cases of illness in the country at this moment (estimate of the U. S. Public Health-W. P. A. survey) and yet many doctors are idle. That is 40 patients a head for the 150,000 American doctors. Why not abolish wasteful, inefficient private practice and use this healing talent?

Of such reasoning in these days there is no end. Why should farmers suffer from a glutted wheat market when a generation of Chinamen want for bread? Why should we have capitalistic unemployment and distress in the shoe manufacturing industry, when if Secretary Perkins had said rightly, there are so many shoeless millions in the south? If somebody would only make it possible to kill all the fleas on all the dogs in the country, or replace every obsolescent backhouse in the rural regions, willing hands would be put to work, prosperity would bloom overnight, and human aches would dissolve in blissful glory. With these "if only" theorists, to state a problem is to solve it.

There always will be those who compare what we have with what we might have. As long as they aren't taken too seriously they perform a certain service. Forever there will be a great gulf between the two, bridged by a lot of unsubstantial "if's."

Certainly people can be found who want more medical treatment, just as many want more food, more clothing, more jewelry, more travel, more power. Progress toward any ideal is bound to be relative. It is measured, not by the distance ahead to Utopia, but by how far we have traveled from points in the past and what the means are for going farther. Social Security is an almost insupportable burden already. Some economists charge that this payroll load is first among the causes that dipped the cycle of business again. Now, to add national responsibility for all the ills of the flesh would be to run a chance of tracing the footsteps of Russia.

A. M. A. Holds Fast

In the face of these signs of division and weakening among its own ranks, the American Medical Association has answered the regimenters with "no surrender." At the same time the Association has reaffirmed the profession's tradition of caring for the afflicted regardless of economic status. Plans were announced recently to mobilize local and state medical associations with other local agencies to see that no one who needs it lacks medical attention.

The fight of the doctors raises an issue that concerns dentists, veterinarians and other professions, all of which treasure their client relationship. Likewise a close parallel is visible in the aims of the reformers as they affect medicine and business.

Business, too, considers itself capable of supplying the needs of its customers and deserving of a wide freedom of initiative. It will applaud the effort by the great majority of the followers of Galen, Paré, Harvey, Lister and all who have

enriched the science of healing to preserve the free doctor-patient relationship.

FRED DE ARMOND.

Correspondence

PRESIDENT MUNSON ADDRESSES THE AUXILIARY

Woman's Auxiliary to the Illinois State Medical Society:

It is with pleasure that I accept the opportunity of speaking to the Woman's Auxiliary to the Illinois State Medical Society. Looking back over the years since the beginning of the organization of the Woman's Auxiliary, from what I see and read of your proceedings published in the ILLINOIS MEDICAL JOURNAL, you have smoothed over many of your difficulties with definite accomplishment and with plans for greater results in the future.

There seemed to be much difficulty in the early beginning of the organization in planning programs that would meet the purpose of assisting organized medicine in combating the adverse criticism of those who have always been unfriendly to medicine.

I remember after appointing a Doctor's wife to act as Councilor for the Fifth District, she came before our medical society and in her opening remarks asked what we wanted the Auxiliary to do. There were so many things apparent that we had not concretely prepared them for their help. Plans and purposes of the Auxiliary had been set forth in the national organization, but as yet had not been formulated so as to be of very much use in the local organizations. These obstacles are now in the past, and each year has added strength and purpose to your national organization, to be of greater value to your local Auxiliary, and in turn to the County Medical Society.

Since beginning my work as Councilor in the State Medical Society, almost fifteen years ago, one word above all others stood out as of paramount importance—and that was "Organization."

Many of the county medical societies as I found them at that time did not even meet once a year and elect their officers, but had them continue without an election. The important thing of organization is the experience gained with groups of men and women being able to work together, having committees who plan the objectives through which real accomplishments are reached.

One of the main objectives of the Auxiliary has been to see that any information reaching the public which pertains to the responsibilities of the community in regard to administration of charity and care of the indigent, that the true facts may always be set forth.

In this way, the Woman's Auxiliary is in a position to know more of the actual affairs of every phase of social life than any other planning bodies, through church, school and social club life, to have a more definite knowledge than other organizations in the county.

On account of the many publications, lay journals and magazines which misrepresent the actual facts, there is always a sentiment backed by those who for many reasons are opposed to organized medicine, and there is constant need of propaganda against all these measures, in the form of lectures, speeches, etc.

In some communities, the Doctor is found on the school board, or as in our own community, a Doctor's wife has served for many years on the school board. I find, as a rule, that organizations whose officers, trustees or committees are represented by a Doctor or his family, are better conducted as to finances and more successfully managed than with any other profession or social member of a community.

My memory goes back to a time when even the medical profession had only a very limited degree of organization. I attended the American Medical Association meeting in Denver in 1898, and the business of the Association was transacted without any elected body of delegates, and only a few standing committees. All matters brought to the Association were discussed in general assembly. It was quite apparent at that time, with the great difficulty in transacting the affairs of the Association, under the limited rules and regulations that were in effect then, the needed accomplishments of the organization.

A well balanced organization is always functioning. It may be slow or active, but like a machine, it is always ready to give results when active energy is applied. At no time in the history of American medicine is there more need of cohesive energy and committee organization

in the Auxiliaries and the County Medical Societies than at the present moment.

On account of the declarations that have been made of the inadequacy of American medicine to deal with the present economic conditions, and the inadequacy of the medical care of the indigent, it has at last become necessary for our profession to accept the challenge, and definitely prove it is false, or be compelled to admit it is true.

The Trustees of the American Medical Association have set forth a plan that will guide the State and County Medical Societies to collect information concerning medical needs in accordance with established policies and local conditions.

A varying number of people may at times be insufficiently supplied with needed medical service for the maintenance of health and the prevention of disease, and as the means of supplying medical service differ in various communities—therefore, the American Medical Association, to further stimulate the State and County Medical Societies to assume leadership in securing the cooperation of the health authorities, dental and nursing professions, welfare agencies and community chests, and in determining the prevailing need for medical or dental service where such may be insufficient or unavailable, and further to outline the necessary procedure for making further studies and reports of the prevailing need for medical services.

The County Medical Societies will appoint a special committee to collect this special information, and further, it will be necessary to consider well the number and qualifications of those who are to assemble the information desired.

This information, or study, is to be made and assembled under eight headings. Questions are to be answered by

1st, Medical and Dental Profession.
2nd, Hospitals.
3rd, Nursing Service.
4th, Health Department Activities.
5th, Medical Service—Private or Government Welfare and Relief Agencies.
6th, Medical Service, provided by Public, Parochial and Private Schools.
7th, Medical Service, provided by Colleges and Universities.
8th, Industrial, Fraternal, Mutual Benefit, Group Hospitalization, and Community Health, etc.

Thirty-seven states have agreed to make this survey. Some estimates have been made that this will require a year or more for the survey and its correlation to be made by the State. Talking with the Secretary of the Wisconsin State Medical Society recently, he stated that each physician of their State Society had been assessed $10.00.

It would seem to me that under some of these group headings, the State and local County Auxiliary can prove of value in securing the information and perfecting this survey. This can be brought about through the usual standing committees in your State Auxiliary and the Illinois State Medical Society.

Medicine touches every phase of the misfortunes of human life. Hence, we are always planning for the relief of sickness or in preventing its cause—disease.

I have made frequent reference to the affairs of medicine, as well as the County Medical Society, because in a general way it applies to much of the aims and purposes of the Auxiliary, and in all matters that have to do with the future problems of medicine, the Auxiliary is vitally concerned.

The healthy have had good medical care as a privilege, and in the last generation the poor have it as a matter of charity, We have now reached the point of citizenship where not only the rich and poor, but all the people alike, are demanding a minimum of health protection as a right.

We are having to begin to think of health nationally, as well as health locally, in our communities, to prevent needless disease and necessary disablement and premature old age or death.

While to some are given the privilege of healthful living, and to others it is denied, any citizen, however patriotic, may become embittered. So while medicine plans the care of the sick and the cure of disease, it must always be active in the plans of prevention.

Before I express any eulogy or tell you of all the deserving things that are due your president, I thought I had better relate you a story—fearing that I might cause you to place too high a

conception on the capabilities and wonderful accomplishments of this woman:

A dissolute, worthless, crap-shootin', drunken Negro was being buried, and the minister was pronouncing a beautiful eulogy over this worthless sort of fellow. He was talking about what a fine Christian gentleman he had been, what a good father, what a fine husband, and how well he had provided for his family, how high he stood in the community, and all the fine things he could think of.

The widow, who had been trying to conceal the relief that she felt over being rid of this incubus, became very much disturbed as the eulogy proceeded. Finally, she leaned over to one of the children and said, "Rastus, you slip up dere and slide back dat coffin and see if dat's yo' pappy he's talkin' 'bout."

I have known enough of your successes and disappointments that a fair degree of success can only be attained by great personal effort upon the part of those on whom the responsibilities of your organization rests.

I know something of the untiring effort of your president the past year, to supply the stimulation to keep life and activity in some of the Auxiliaries, as well as the energy and enthusiasm required to organize new ones.

S. E. Munson, M. D.,
President, Illinois State Medical Society.

A RESOLUTION

Whereas, Dr. George H. Hunt has faithfully and efficiently carried on the duties of Secretary and Treasurer for the Edgar County Medical Society of this State from 1904 to 1937; and

Whereas, This faithful obligation has been performed in a manner reflecting great credit and loyalty upon Dr. Hunt; and

Whereas, This period of service is one of the longest, if not the longest, in the history of this Society; and

Whereas, The said Dr. George H. Hunt has practiced Medicine and Surgery in this community for over fifty years in a manner which reflects great honor to him and with great benefits to this community;

Now, Be It Resolved, That these resolutions be spread upon the minutes of the Society's records and a copy of these resolutions be sent to Dr. Hunt and to the Secretary of the State Medical Society that this record and service be called to the attention of the various societies in our State.

POST-GRADUATE COURSE FOR PHYSICIANS

As an important feature of the Illinois program in maternity and infant hygiene, a series of one-week post-graduate courses in obsteterics and pediatrics will be offered to Illinois physicians during July and August. The first course begins on Tuesday morning July 5 while subsequent courses will begin on each succeeding Monday morning during July and August. Each class will be limited to 18 members and any licensed physician in the State is eligible to attend. There will be a registration of $10 but no other tuition costs.

The courses will be given by the Medical College of the University of Illinois at Chicago with the cooperation of other medical colleges and the State Department of Public Health. Applications would be filed with G. R. Moon, Examiner and Recorder of the Chicago Professional Schools, 1853 W. Polk Street, Chicago.

Lectures, round-table discussions, ward walks, dispensary service, mannequin demonstrations, and home and hospital procedures with reference to prenatal, obstetrical and post-natal care will be included in the courses. On the faculty will be such outstanding obstetricians as Doctors Joseph Baer, Frederick H. Falls, F. H. Adair, W. C. Danforth, A. F. Lash, W. H. Browne and Charles Newberger. The pediatricians will include Doctors Julius Hess, Clifford Grulee, Arthur Parmelee, Isaac Abt, Maurice Blatt, Robert Black and H. E. Irish. The course is designed especially for practicing physicians and to equip them with the best available knowledge and technique in the care of mothers and infants.

FREE SUMMER COURSE ON BOARD TRAINING SHIPS FOR BOYS AND YOUNG MEN

Opportunity to Study to Become Officers in Merchant Marine

To acquaint the youth of America with the opportunities of a career as officers in the Uniited States Merchant Marine, the American Nautical Academy, National Training School for Merchant Marine Officers, Washington, D. C., announced today that boys and yonug men between the ages of 10 and 25 years will be allowed to secure practical ship experience on board a training ship of the Academy within the period from July 1st to October 1st.

The young men may remain on board ship for the entire period or for any shorter time they may wish, but not for less than four weeks.

There is no tuition charge for any of the courses offered by the Academy, and no obligation for future merchant marine, military or naval service of any kind is incurred by the young men.

There is no charge for instructon nor for living quarters on board ship. The only required expense

is for meals which are 49 cents. Three meals are served daily.

The schoolship to which the young men will be assigned is the Training Ship "MARSALA," a five-masted barkentine-rigged vessel of 2,500 tons, 300 feet long, and 46 feet wide. The vessel was built in 1919-20 and is one of the largest sailing vessels in the world.

While on board ship cadets will receive minor medical treatment when necessary without charge. On Sundays the young men will be allowed to attend divine services at the churches of their respective denominations ashore.

This is the ninth annual summer course offered by the Academy, and will be under the personal supervision of the Captain Commandant of the Academy who will be in command of the vessel.

While on board ship the boys will follow the regular daily ship routine, and will be given practical instruction in nautical subjects including seamanship (ship's work), signaling, rowing, handling, and use of motor and pulling boats, life-saving, and naval drills. They will also receive instruction in the use of life buoys, first aid, the duties of lookouts, the compass, log, lead, and ground tackle, as well as the watch in port—their duties and responsibilities.

Students will join the training ship in Long Island Sound for the summer training period.

Those completing the summer course with a passing grade will be eligible to apply for a scholarship in the Regular Course.

The Regular Course is designed to cover a period of three years of sea service. The first two of these years the cadet spends cruising, and studying on the training ship. For the third year the cadet is assigned to a steamship of one of the merchant marine lines. Following the completion of these three years of sea service the cadet is eligible to take the officer's examination of the United States Bureau of Marine Inspection and Navigation, Department of Commerce, for a certificate as a Third Officer in the Deck Division of steamships in the Merchant Service of the United States.

Due to the fact that the number of accommodations available is limited, those wishing to take advantage of this opportunity should write at once to the

American Nautical Academy, National Training-School for Merchant Marine Officers, Washington, D. C.

RABIES CONTROL AIDED BY COOPERATION OF DOG OWNERS

Hundreds of requests for information on rabies come every year to the U. S. Department of Agriculture. Dr. H. W. Schoening of the Bureau of Animal Industry makes these timely observations:

Rabies is one of the great menaces to dogs. Dog owners and others can help to control this disease by familiarizing themselves with precautions. During the summer months when many tourists take dogs with them in automobiles, opportunities for spread of the disease increase. Doctor Schoening cites a recent case in which a tourist brought a dog from a distant State into a large eastern city. A short time later the dog developed rabies. Doctor Schoening emphasizes the importance of obtaining veterinary counsel whenever a dog, especially a strange dog, shows symptoms of rabies.

The symptoms of rabies are quite characteristic and may be divided into two types—the furious or irritable and the dumb or paralytic.

In the furious form of rabies there is a marked change in the disposition of the animal which should arouse suspicion. An affectionate dog may become morose and depressed, whereas a snapping animal may become cowardly or affectionate. This stage is followed in a few days by an irresistible tendency to roam. The dog fights or bites at anything that interferes with its freedom. On returning home after its wandering, the dog frequently seeks a secluded place. Although the secretion of saliva may become excessive through inability of the dog to swallow, foaming at the mouth is not a common symptom, as sometimes believed.

The dumb or paralytic form of rabies is less common than the furious type. The affected dog is depressed from the beginning and hides. The first symptom commonly noted by the owner is paralysis of the lower jaw, as a result of which the animal may be suspected of having a bone in its throat. The paralysis progresses until the animal dies.

Some countries, notably England and the Territory of Hawaii, are entirely free of rabies. They have prevented the introduction of the disease by a quarantine on dogs offered for import, combined with other precautions rigidly enforced. In countries where the disease is already present, the most dependable measures are licensing, impounding destruction of stray dogs, and quarantine measures. A further aid is preventive vaccination.

Experiments conducted by the Bureau of Animal Industry indicate that resistance to rabies can be increased in many dogs not already exposed by a single injection of rabies vaccine. This resistance is only relative, however. It may be strong in some animals but weak or lacking in others. Thus some animals can withstand actual exposure to the disease whereas others may not. Hence vaccination is only an aid to the standard control methods already mentioned. Prophylactic rabies vaccine is an entirely safe product as now manufactured under Federal supervision. It contains no living virus and thus cannot cause or spread the disease. This point is emphasized by Bureau officials despite contrary statements by persons opposed to preventive vaccination.

The variable results obtained from vaccination have caused differences of opinion concerning its value. These differences, Doctor Schoening urges, should not interfere with full cooperation and support by dog owners and veterinarians of other standard measures for controlling the disease.

A SURVEY IS IN PROGRESS RELATIVE TO AVAILABLE MEDICAL CARE IN COOK COUNTY

The Board of Trustees on June 14 approved the recommendations of the Committee on Medical Economics concerning the survey of the need and supply of medical care in Cook County.

"The cost of the survey, to be defrayed by the Chicago Medical Society, is estimated at $25,000. It is to begin June 15, and will require about eight months to complete. The director of the survey is Dr. William Henry Walsh, of Chicago, hospital consultant, who in 1935 made the Study of the Abuse of Free Medical Service in Out-Patient Practice,—and Dr. Neal N. Wood, recently director of the Ohio State University Hospital, at Columbus, Ohio, as field director.

"This study is being undertaken pursuant to the action of the board of trustees of the American Medical Association in stimulating state and county medical societies through its officers, its special committee and its Bureau of Medical Economics to secure the cooperation of state and local health agencies, hospital authorities, medical, dental, nursing and pharmaceutical professions, social service workers, private and governmental welfare and relief agencies, public, parochial and private schools, colleges and universities; also of industrial, fraternal, group hospitalization, community health and similar organizations.

"The objective of this study is to determine so far as may be possible, the available facilities for medical care and preventive medical services, the prevailing needs, and the development of preferable procedures for supplying those needs. It is anticipated that this study will result in closer coordination of the local diagnostic, curative and preventive medical facilities, that it will make such services more readily available; it will eliminate duplication of time and effort and tend toward the conservation of financial resources and personnel.

"The scope of the study embraces an analysis of the free care given by every physician and dentist in Cook County; the number of free beds and the amount of free service given in hospitals and clinics; information from health departments and officers as to the lack of medical care and the relative morbidity rates amongst low and high income groups; the facilities and resources of and the demands upon all voluntary and public welfare and relief agencies for medical relief; the experience of nursing organizations, pharmacists, etc., with respect to medical care; and finally, a survey of the medical services furnished by industry, schools, colleges and other educational institutions.

"The Committee on Medical Economics feels that this study will be based largely on the facts reported by the *physicians* and members of the other above mentioned professions, all of whom in their daily work contribute to the total service for needy patients requiring diagnosis, cure, or prevention. Each physician in the county will in the near future receive from Dr. Walsh a questionnaire prepared by the American Medical Association requesting information concerning the amount of free work he did in 1937, asking him to give the details concerning any instance in which a person has been unable to obtain medical, dental, or hospital services, and asking for his comments on his own experiences and observations concerning the need for medical services and the methods of supplying those needs which he thinks should be considered. Each member of the Chicago Medical Society is urged in his own interest to give very painstaking attention to the prompt and exact completion and return of this questionnaire within ten days after its receipt. Complete instructions will accompany the questionnaire, and if, after reading them, any point is still not clear, physicians are invited to phone or write to Dr. Walsh at once. If any physician wishes an additional copy of the questionnaire, in order that he may himself retain a copy of the information which he will compile and forward, it may be had for the asking."

UNITED STATES CIVIL SERVICE EXAMINATIONS

Medical Officer, $3,800 a Year—Associate Medical Officer, $3,200 a Year

Food and Drug Administration, Department of Agriculture

Optional branches.—To become eligible, applicants must qualify in at least one of the following optional branches, *and must state in their applications the branch, or branches, desired:*

1. Cardiology.
2. Dermatology.
3. Eye, ear, nose, and throat (single or combined).
4. Industrial medicine.
 (a) Gas analysis or toxic dust.
 (b) General.
5. Internal medicine and diagnosis.
6. Medical pharmacology.
7. Pathology and bacteriology.
8. Public Health.
 (a) General.
 (b) Venereal disease.
9. Roentgenology.
10. Surgery.
 (a) General.
 (b) Orthopedics.

Applications must be on file with the United States Civil Service Commission at Washington, D. C., not later than the following dates:

(a) July 18, 1938, if received from States other than those named in (b) below.

(b) July 21, 1938, if received from the following States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

The United States Civil Service Commission announces open competitive examinations for the positions named above. Vacancies in these positions in Washington, D. C., and in the field, and in positions requiring similar qualifications will be filled from these examinations, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The registers resulting from these examinations will also be used for filling vacancies in certain optional branches in the Public Health Service (Treasury Department) and the Veterans' Administration.

Employment lists.—Separate lists of eligibles will be established in each grade for each of the optional branches listed above.

Compensation—The salaries named above are subject to a deduction of 3½ per cent toward a retirement annuity. Further deductions are made as follows:

Public Health Service (Treasury Department): $600 a year for quarters, $330 for full subsistence, and $60 for laundry when furnished.

Veterans' Administration: At least $480 a year for quarters, subsistance, and laundry, when furnished.

Assistant Medical Officer.—Vacancies in this position, at $2,600 a year, may be filled from the register for Associate Medical Officer by certification of those eligibles who express a willingness to accept the lower salary. Applicants should indicate in their applications the lowest salary they will accept.

APPLICANTS MUST FILE THE FOLLOWING WITH THE UNITED STATES CIVIL SERVICE COMMISSION, WASHINGTON, D. C., NOT LATER THAN THE CLOSING DATE SPECIFIED AT THE HEAD OF THIS ANNOUNCEMENT

1. Application Form 8, *including* the Officer's Certificate of Residence, Special Form 2398, and Physical Fitness Form 13 (yellow), all properly executed, the last-named by a doctor of medicine. Only one application should be filed by a person wishing to apply for more than one grade and optional branch. (See paragraph headed "Assignment of Grade" below.)

2. Applicants who wish to claim veteran preference must file Preference Form 14 (blue), properly executed and accompanied by the documentary proof required therein.

3. Foreign-born applicants must submit with their applications proof of United States citizenship.

4. Applicants must submit with their applications their unmounted photographs, taken within 2 years, with their names written thereon. Proofs or group photographs will not be accepted. Photographs will not be returned to applicants.

5. In addition to answering the questions in the application form, applicants must write plainly and legibly in their own handwriting a statement of approximately 200 words setting forth what elements in their experience particularly fit them to perform the duties of the position applied for, and why they believe such experience will help them fill this position.

6. Applicants claiming 1 year's training in any special branch must file a corroborative certificate from the appropriate official of the institution or organization under which, or the specialist under whom, the specialized training has been acquired.

7. Applicants claiming undergraduate interneship must file a certificate from the hospital showing regular acceptance in such a status.

8. Applicants claiming service in the commissioned medical corps of the Army, Navy, or U. S. Public Health Service must furnish official proof thereof.

9. Applicants who desire appointment in the U. S. Veterans' Hospital, Tuskegee, Ala., must so state in their applications. This institution is maintained especially for colored patients, and the entire staff therein is colored.

Application forms.—The necessary forms may be obtained from the Secretary, Board of United States Civil Service Examiners, at any first-class post office, from the United States Civil Service Commission, Washington, D. C., or from the *United States Civil Service district office* at any of the cities given below (the title of the examination desired should be stated):

Atlanta, Ga., New Post Office Building.
Boston, Mass., Post Office and Courthouse Building.
Chicago, Ill., New Post Office Building.
Cincinnati, Ohio, Post Office, Building.
Denver, Colo., Post Office Building.
New Orleans, La., Customhouse.
New York, N. Y., Federal Building, Christopher Street.
Philadelphia, Pa., Tenth Floor, Gimbel Building.
Seattle, Wash., Federal Office Building.
St. Louis, Mo., New Federal Building.
St. Paul, Minn., New Post Office Building.
San Francisco, Calif., Federal Office Building.
Honolulu, T. H., Federal Building.
Balboa Heights, Canal Zone, Secretary, Board of United States Civil Service Examiners.
San Juan, P. R., Chairman, Puerto Rican Civil Service Commission.

The exact title of the examination desired, as given at the head of this announcement, should be stated in the application form.

THE AIMS OF THE MEDICAL PROFESSION AS THEY RELATE TO THE PUBLIC: PRESIDENT'S ADDRESS

Irvin Abell, Louisville, Ky. (*Journal A. M. A.*, June 18, 1938), states that now that social and economic changes have disrupted what were formerly regarded as established policies in both the social and the professional aspects of organized society, the physician finds other problems and duties to which professional responsibility demands that he give attention. In the economic upheaval and resultant change in the social and economic structure of our country in the past few years, much has come about that is at wide variance with what heretofore has been regarded as fixed and established policies. There has been a tendency to impress commercial and financial patterns on all features of society, including medicine. A corollary of the tendency to emphasize mechanical devices is the attempt to standardize medical procedures and to provide them on a low cost, mass production scale. There is no way to standardize the infinite variety of human beings in health and disease. To formulate a program to meet the actual needs of the indigent and partially indigent is no simple task. The trial and error experience with social and economic programs on the part

of the federal government in recent years affords ample proof of the difficulties and disappointments encountered. There is no definite means of computing in monetary valuation the service voluntarily rendered these groups during the past eight years, but from such data as are available a fair estimate based on a minimum fee schedule would place it in the neighborhood of a million dollars a day, a contribution not equaled or exceeded by any agency other than the federal government. Surely this offering for the public good would indicate that medicine has more than fulfilled the obligation implied in its Principles of Medical Ethics to give of its services to the needy and that as a profession our ideal and our aim have been the provision of service rather than solicitation for compensation. Organized medicine insists on a high standard of value in medical service. Any plan or proposal for wider distribution must be judged on its consonance with good public policy and the maintenance of such a standard. The aims of the medical profession as they relate to the public may be briefly summarized: 1. Maintenance of the present high standard of medical education, affording assurance that the graduate is competent to care for the sick. 2. Adequate provision for graduate education, with specified training for the development of specialists, and continued training for those who are not specialists so that the level of professional efficiency may be raised. 3. Extension of public health and preventive medicine to cover the field adequately. 4. Continuation of the practice of ethical scientific medicine on its present high plane. 5. Protection of the public against medical frauds, falsely labeled foods, drugs and appliances. 6. The widest possible dissemination of health information to enable the public to act intelligently in the preservation of its health and in the prevention of disease. 7. The development and consummation of plans for extension of medical service to all groups of the population consonant with our established high standard of quality.

DISTRIBUTION OF HOSPITAL SERVICE

In the United States there are only five counties with a population density of five per square mile within thirty miles of which there is no registered general hospital. As vast programs of hospital construction are being advocated,[1] certain facts regarding the present distribution of hospital facilities should be kept in mind. In 1937 there were 6,128 hospitals registered by the American Medical Association with a capacity of more than a million beds and fifty-five thousand bassinets, to which well over nine million patients were admitted during the year.[2] True there are 941 counties without a registered hospital, but of these, 560, or 60 per cent, lie wholly within a thirty mile radius of hospitals in adjoining territory. There remain 368 counties parts of which are within thirty miles of existing hospital facilities and, in the whole country, but thirteen counties no part of which is within thirty miles of a registered general hospital. The population of these counties is 67,800. Eight of them support less than five persons per square mile. There may be some localities in which hospital facilities are needed. However, the Commonwealth Fund, which for the past ten years has been awarding hospitals to communities which seemed to be able to maintain such institutions with proper standards, has thus far made eleven awards.—*Jour A. M. A.*, June 11, 1938.

THE AMERICAN COLLEGE OF PHYSICIANS

The Twenty-third Annual Session of the American College of Physicians will be held in New Orleans, with general headquarters at the Municipal Auditorium, March 27-31, 1939.

Dr. William J. Kerr of San Francisco is President of the College and will have charge of the program of general scientific sessions. Dr. John H. Musser of New Orleans has been appointed General Chairman of the Session, and will be in charge of the program of clinics and demonstrations in the hospitals and medical schools and of the program of round table discussions to be conducted at the headquarters.

INTERNATIONAL MEDICAL POSTGRADUATE COURSES IN BERLIN

In autumn of 1938, the following international medical postgraduate courses are prospected:

1. Course in the field of internal diseases in which lives are suddenly endangered (from 3rd to 8th of October). Fee: 50,—RM.
2. Postgraduate course on the subject of ailments of muscles and joints (from 10th to 16th of October). Fee: 50,—RM.
3. Progress in the field of hormones and vitamins (from 17th to 22nd of October). Fee 50,—RM.
4. Course on tuberculosis in the Berlin Municipal Hospital for Tuberculosis (from 24th—29th October). Fee: 50,—RM.
5. Course in diseases of the ear, nose and throat (from 26th of September to 8th of October). Fee for the whole course: 150,—RM; for the theoretical part of the course: 100,—RM.
6. Course in accident-surgery (from 17th to 22nd of October). Fee: 70,—RM.
7. Postgraduate course on the subject of neurotic diseases (from 24th to 29th of October). Fee 50,—RM.
8. Propaedeutic respectively additional training course in homeopathy (from 10th of October to 5th of November). The course is divided into two parts. The fee for part one is 25,—RM. Part two can be taken independently from part one at a fee of 50,—RM. Both parts together 75,—RM. For assistant doctors 15,—, 30,— and 40,—RM respectively.
9. Special courses in all branches of medicine with practical work at the bedside and in the laboratory, to be held every month. For these courses par-

1. The Need for a National Health Program, Report of the Technical Committee on Medical Care, Interdepartmental Committee to Coordinate Health and Welfare Activities, Washington, D. C., 1938.

2. Hospital Service in the United States, J. A. M. A. 110: 959 (March 26) 1938.

ticipants are requested to communicate their wishes in order to find a complete program on their arrival. Courses 1 to 8 will be held in German, and the special courses also in foreign languages.

For programmes and further information apply to the Geschäftsstelle der Berliner Akademie für ärztliche Fortbildung, Berlin NW 7, Robert Koch—Platz 7 (Kaiserin Friedrich-Haus).

Foreign doctors and German doctors resident abroad are granted a reduction of fare of 60% on the German Railways Company's lines; a foreign doctor can reduce the cost of his stay considerably by utilizing what are called "registered marks"; it is advisable to arrange matters with the local bank *before* starting.

BOOKS FOR DOCTORS

A recent list of extramedical reading contains some exceedingly interesting items for literary-minded doctors. In the field of fiction there is The Man Who Started Clean, by T. O. Beachcroft, a novel of a man who is a victim of amnesia, and who has to rebuild his life; and Radium, by Rudolph Brunngraber, the romance of the research and practical phases of the utilization of this strange and precious metal. In the sphere of life histories, Eva Curie relates the part her mother played in the discovery of radium (Madame Curie: A Biography). Doctors on Horseback: Pioneers of American Medicine, contains brief biographies of some early American physicians by James Thomas Flexner. In Napoleon: A Doctor's Biography, Boric Sokoloff endeavors to penetrate "the mystery of an amazing mind by showing the workings of the sick body by which it was supported." Henry E. Sigerist, the distinguished medical historian, presents a documented study of Socialized Medicine in the Soviet Union. Medical Magic, by David Dietz, narrates the methods by which medical science attacks the problems of disease. The Span of Life, by William Marias Malisoff, deals with longevity. Milestone of Medicine, by James Alexander Miller, is a series of lay lectures. The Poison Trail, by William F. Boos, is the version by a toxicologist of the struggle of man against disease. And The Doctor Looks at Murder, by Edward Marten, is the true story of the experience of the deputy chief medical examiner of the city of New York.—*Medical Record.*

STATISTICS ON DEATHS FROM RHEUMATIC HEART DISEASE

Halbert L. Dunn, Washington, D. C., and O. F. Hedley, Philadelphia (*Journal A. M. A.,* April 30, 1938), point out that changes have been made in the method of tabulating deaths from heart disease to provide for the separate tabulation of deaths from rheumatic heart conditions. The application of these changes began with the tabulation for January, 1937. Physicians throughout the United States are requested to report deaths from rheumatic heart disease as such and to qualify the term when possible by specifying the anatomic lesion in accordance with the regrouping listed in the table.

RESOLUTION AGAINST SPECIAL CONTRACTS BY HOSPITALS

The following resolution was adopted by the Executive Committee of the Hospital Council of Southern California at a meeting held on January 11, 1938:

WHEREAS, Hospitals are constantly striving to balance budgets, and more often than not fail to balance their budgets;

WHEREAS, True costs studies show many published rates, particularly ward rates, less than cost;

WHEREAS, Insurance companies, corporations with medical departments, physicians doing group practice have asked or demanded special rates and in many cases succeeded in getting them;

WHEREAS, These rates are not founded on any social basis, but are preferential to those most able to pay full costs;

WHEREAS, Such policy of granting special rates to powerful companies has been thoroughly discredited, and branded as bad business ethics;

WHEREAS, Such policy not only is bad for hospitals, but also results in unfair competition in the profession of medicine also; be it therefore

Resolved, (*a*) That hospitals in this Council go on record as disapproving the practice of entering into special contracts at special rates.

(*b*) That hospitals in this Council recommend and urge all hospitals to grant no rates below their own published schedule, except to individual cases of merit, and to those patients after social service investigation proves such right.

(*c*) That a copy of this resolution be forwarded to the County Medical Association and to its members, assuring each high-class practicing physician that no secret agreements will place him at a disadvantage. --C. & W. M.

DOCTORS' FEES LIKE TAXI FARES

A hundred years ago practicing physicians in New York City and other Eastern communities charged by the mile, like modern taxi cab drivers, according to Dr. Henry Burnell Shafer, in his recently issued book, "The American Medical Profession, 1783 to 1850."

In Lowell, Mass., for example, the standard charge for treating patients at home was seventy-five cents for the first mile and forty cents for each additional mile, with a surcharge of twenty-five cents a mile for night trips.

Dr. Shafer's research discloses that in those days New York surgeons charged $50 for amputation of a limb, $10 for amputation of a finger or toe. Bleeding charges were: by cupping glass, $5; at the arm, $2, and at the jugular vein, $5.—*New York State J. Med.,* Oct. 1, 1936.

RUNNING TRUE TO FORM

Professor Kranz: "What did you find out about the salivary glands?"

Stude: "I couldn't find out a thing, Professor; they're too darn secretive.—*Purple Parrot.*

ILLINOIS STATE MEDICAL SOCIETY

PROCEEDINGS OF THE HOUSE OF DELEGATES

May 17-19, 1938

Springfield

The first session of the House of Delegates of the Illinois State Medical Society was held in the Elks Club, Springfield, Tuesday, May 17, 1938.

The meeting was called to order at 3:30 P. M. by the President, Dr. R. K. Packard, Chicago.

The first order of business was the report of the Committee on Credentials.

Dr. E. P. Coleman, Canton, reported that the Committee had certified 60 down state delegates, 49 Chicago Medical Society, and 16 members of the Council, a total of 125. He moved that this constitute the official body for this meeting. (Motion seconded by Dr. F. P. Hammond, Chicago, and carried).

The next order of business was the roll call by the Secretary.

Dr. J. S. Nagel, Chicago, moved that the report of the Credentials Committee be accepted as the official roll call for this meeting. (Motion seconded by Dr. Mather Pfeiffenberger, Alton, and carried).

The next order of business was the approval of the minutes of the last meeting. Dr. J. S. Templeton, Pinckneyville, moved that the minutes as published in the July, 1937, issue of the Illinois Medical Journal be approved as the official minutes. (Motion seconded by Dr. W. E. Kittler, Rochelle, and carried).

The next order of business was the appointment of Reference Committees by the President. He appointed the following Committees:

Credentials Committee: Drs. E. P. Coleman, Chairman, G. C. Otrich, W. E. Kittler, Robert H. Hayes and the Secretary.

Attendance Committee: Drs. T. D. Doan and W. S. Bougher.

Committee on Reports of Officers (President, President-elect, Secretary, Treasurer, Chairman of the Council): Drs. G. Henry Mundt, Chairman, C. H. Hulick, and Frank P. Hammond.

Committee on Reports of Councilors: Drs. C. B. Ripley, Chairman. Oscar Hawkinson and L. O. Frech.

Committee on Reports of Standing Committees: Committee on Public Relations, Committee on Medical Legislation, Medico-Legal Committee, and Committee on Medical Education and Hospitals: Drs. George W. Post, L. S. Reavley and H. P. Saunders.

Committee on Reports of Council Committees (Three Committees): Committee "A", to review and report on reports of Educational Committee, Scientific Service Committee, Medical Economics Committee, and Special Committee on Indigent Medical Care: Drs. Mather Pfeiffenberger, Arrie Bamberger, and E. R. Miner. Committee "B" to review and report on Committees on Maternal Welfare, Veterans Service Committee, Committee on Cancer, Scientific Exhibits, Committee on Physical Therapy and Fifty Year Club: Drs. Frank F. Maple, E. E. Davis and P. J. McDermott. Committee "C" to review and report on reports of Interprofessional Relations Committee, Control of Syphilis Committee, Ethical Relations Committee, Committee on Constitution and By-Laws, Committee on Corporation Practice of Medicine: Drs. Walter Stevenson, Frank L. Brown, and J. C. Krafft.

Committee on Scientific Work, Social Security Problems, Report of Editor: This Committee should review the annual meeting program, visit sections, and comment on sections and section work as presented at this meeting. In addition, the report of the Editor should be read and reported on, at the second meeting of the House of Delegates: Drs. Robert H. Hayes, A. E. Walters, and S. B. Peacock.

Resolutions Committee: To receive all resolutions, discuss same with those presenting the resolutions, and make proper recommendations at the second meeting on Thursday morning: Drs. T. H. Culhane, J. H. Hutton, and F. H. Muller.

Committee on Miscellaneous Business: To review and report on the report of the Woman's Auxiliary, comment on the Hall of Health arranged for this annual meeting, "Health Exhibits for the Public" and make whatever recommendations or suggestions that may be deemed advisable. Other matters may be referred to this Committee during the session: Drs. G. E. Johnson, P. E. Blodgett and C. W. Carter.

The President: The next item of business is the Annual Reports. These reports have been

printed in the handbook. We are going to ask you unless you have some supplementary report to make not to make any report. That was the order of the House of Delegates two or three years ago in order to save time.

Each report was called for in turn.

1938 ANNUAL REPORTS

REPORT OF THE PRESIDENT

To the Members of the House of Delegates:

The important problems confronting the medical profession of Illinois during the past year have been and continue to be somewhat as follows:

1. The medical legal defense as formerly carried on by the Society was discontinued by the House of Delegates last year because it seemed that this constituted an unethical procedure as related to the Bar Association, and the medical profession of Illinois did not care to fight corporations practicing medicine on one hand and on the other hand work under an arrangement that seemed to constitute the practice of law. Some physicians throughout the State had expressed themselves to the effect that the discontinuance of this service has removed the primary advantage of belonging to the Society and have expressed the opinion that the dues should be reduced. The dues appropriated to this particular part of the Society's work were one dollar ($1.00) per capita. For those few who held to that opinion, let it be said, that the committee is still rendering valuable service in their behalf and that future studies are being made relative to how the Medico-Legal Committee can render better service to the members of the State Society. All other functions of the Society have been maintained and the volume of their work has increased, such as the Legislative Committee, Educational and Scientific Service Committee, Medical Economics Committee and publication of the Journal and it seems that our problem is not one of reducing the dues but rather one of increasing dues if we are to carry on successfully the work that is demanded at this time.

2. The care of the indigent still remains the serious problem not only for the profession but for Society and Industry as a whole. The solution of this problem lies in the return to normal economic conditions in this country, and there is little that the medical profession can do in shaping the general policies of either Industry or Government. It is to be hoped that as long as the present condition exists and even in the future when we return to a normal indigent load that all County Medical Societies will make a serious attempt to do away with the system of a township or county doctor and establish a system whereby the medical care of the indigent will be under the control of the County Medical Society. This will necessitate cooperation between the profession and various governmental agencies and the public.

3. The providing of adequate medical care for all of the people must be considered to some degree as a medical problem, but its accomplishment can only be obtained by the concentrated effort of the profession and the intelligent cooperation of agencies interested in adequate medical care. These agencies of necessity must include the public health service, local boards of health, community chest, philanthropic organizations, industry and in cases of extreme depression Federal, State, and local funds.

4. The survey to be made by all County Medical Societies as outlined by the American Medical Association is our most immediate problem and should receive immediate consideration and action. This study will do much to clarify the problems presented under the third heading. This survey will of necessity cost considerable money both on the part of the State Society and the County Societies. The expenses to the County Societies will depend somewhat upon the size, population, type of industry, etc, located in that particular county. I think it is impossible for the State Society to meet the entire expenses of this survey. In some of the larger Counties such as Cook County in particular it will necessitate employment of a full time director and staff to make this survey. There are probably other Counties where they will have to have additional help in their organization to complete this survey. In the smaller Counties it will undoubtedly be impossible for the State director to assist in making this survey. It is very important that this work be started at once and the survey be completed as rapidly as possible because the information compiled is going to be valuable not only to the profession but to the public and all agencies interested in medical care.

5. Maternal Welfare Committee:

The Maternal Welfare Committee appointed by the governor and the one appointed by the State Society have been working harmoniously during the past year in the attempt to reduce maternal and infant mortality in the State of Illinois. This work not only includes refresher courses for the profession but includes a program of lay education because it is easily demonstrated that in certain sections where maternal and infant mortality is high it is due to two primary factors. First, the indigency and low income group of the population, and second, the lack of knowledge regarding the necessity of prenatal care, isolation and sanitation. The committees in charge of this work have made real progress and should have the hearty cooperation of all County Medical Societies.

Finally there are many other problems confronting the Society which call for study and action by your Officers and Councilors and I am sure that during the past year they have given much time to the discharge of their duties.

Respectfully submitted,

R. K. Packard, M. D.,

President, Illinois State Medical Society.

REPORT OF THE PRESIDENT-ELECT

The responsibilities of the President-Elect during the past year have been lightened by only a small amount of committee work required.

A previous report made at the October meeting of the Council of a visit to the Kentucky State Associa-

tion meeting, held at Richmond, Kentucky, September 14-16. A motion was made by the Secretary, Dr. Arthur T. McCormack, that Dr. Munson, as President-Elect of the Illinois State Medical Society, and a fraternal delegate from his great state, be made a guest of the Kentucky Association during its session and be invited to participate in the proceedings of the House of Delegates. After being duly seconded, President Northcutt put the motion, which was carried. Dr. Munson replied: "It is a pleasure for me to be here and accept your cordial invitation. I shall be glad to answer any of your questions and to participate in your deliberations. I had the pleasure of meeting your distinguished Secretary some years ago, and have had a very high regard for him ever since. I congratulate him and the Kentucky State Medical Association which he represents, upon his election as President of the American Public Health Association. I am also pleased, as I know are the members of the Illinois delegation to the House of Delegates of the American Medical Association, that you have the high honor again of having one of your distinguished members, Dr. Irvin Abell, chosen as President-Elect of the American Medical Association. I am sure these distinguished sons of Kentucky will not only serve faithfully in the performance of their duties, but will bring high honor to the Kentucky State Medical Association and the medical profession of the nation."

It has been a pleasure to respond to invitations during the past winter from some of the medical societies. An invitation to speak to the Rotary Club at Hillsboro on the subject of "Socialization of Medicine" was accepted, and the speaker was accorded a very courteous reception. An invitation was accepted from Adams County Medical Society, as well as St. Clair County Medical Society, where talks were made along the lines of socialization of medicine and the medical responsibilities of the future. Visits were also made to Warren County Medical Society, as well as to Mason, DeWitt, and Macon Counties. At each place there was a most cordial reception.

The Northwest Regional Conference was attended in Chicago on February 13, 1938. This was a very interesting and most profitable meeting, particularly the report made of the "Oakland County Medical Plan," by Dr. R. G. Tuck, of Pontiac, Michigan; also, "Group Hospitalization in St. Louis," by Dr. Carl F. Vohs, of St. Louis. Luncheon was served by the Indiana State Medical Society as host to the representatives from the State Medical Societies. This was followed by a discussion of the project, "Medical Care for All of the People," by Dr. R. G. Leland. The outstanding plan in operation in Sedgwick County, Kansas, was given by their executive secretary, Mr. Jack Austin, of Wichita, Kansas.

I took of my personal time the opportunity to attend one of the most worthwhile meetings, from an official standpoint, during the past winter, the annual Conference of Secretaries of the Constituent State Medical Associations, held at the American Medical Association Building, November 19-20. Dr. J. H. J. Upham, Columbus, Ohio, President of the American Medical Association, stated that as far as the scientific side of medicine is concerned, we can be proud of the progress that is being made, but stressed the uneasy feeling that he observed at the present time, which he felt was due to the lack of better organization. Dr. Walter F. Donaldson, Pittsburgh, Pa., was nominated and elected chairman of the session. He stressed the efforts that have been made for the extension of postgraduate courses of the State Medical Associations. Dr. T. W. M. Long, of Roanoke Rapids, North Carolina, stated that if post-graduate instructions are to reach most of the physicians, it must be carried to them, because of the cost involved in leaving home and the impossibility of leaving their practice for any length of time.

There seems to be much to be done by each of our medical organizations, down to the County Medical Society and in its well organized committees, if we are to accomplish our purpose and determination of solving ourselves the problems that lie before us, as well as those that are laid on our shoulders by an ever-changing economic condition, and too often ill-advised public office holders. We must require and expect personal service from every member of the medical profession.

Respectfully submitted,

S. E. Munson, M. D.,

President-Elect.

REPORT OF THE SECRETARY

To the Members of the House of Delgates:

It is the desire of your Secretary in this 1938 Annual Report, to discuss some of the outstanding achievements of the Illinois State Medical Society during the past twelve months. You will notice that this annual meeting is referred to as the Ninety-Eighth Annual Meeting while the meeting of a year ago was scheduled as the Eighty-Seventh Annual Meeting. This change was made as ordered by the Council with the approval of the House of Delegates one year ago, and the seal has been changed according to the instructions which were given at that time. The Illinois State Medical Society actually was formed in 1840, and a few meetings were held during the next ten years, but the reorganization was perfected in 1850 with annual meetings following each year until this date, with only two meetings cancelled during the Civil War.

During the past year the Society has been most fortunate in assuming responsibility for discharging certain duties pertaining to various health activities provided in the Social Security Act. The Illinois plans for aid to crippled children, maternal and infant welfare, and the control of syphilis, have been developed and have been carried on in a most acceptable manner, with the State and County Medical Societies assuming much responsibility in their management. We believe, in comparing these activities in Illinois and in other states, that we have adopted a procedure which is worthy of emulation. It is not a question of whether we approve this work as prescribed in the Social Security Act, but it is work that will be done regardless of our cooperation, and it seems more desirable for medical societies to assume leadership in carrying out the provisions rather than have it done by groups less capable of assuming the

responsibility, and supplying the type of service which is best for the people of Illinois.

The Maternal Welfare Committee as appointed by the Council is functioning in a most commendable manner, and for the best interests of mothers and infants of this state. The organization has been completed to the individual county units, and a great deal of interest has been aroused in every community, where many lay groups are not only interested, but are desirous of cooperating with the State Society Committee. The Committee has held regular meetings which have been well attended and the report of the committee should be read by every member of our State Medical Society.

The problem of indigent medical care has been of paramount interest to this, as well as all other medical societies throughout the country. The Council has selected a committee to make a careful study of plans which have been operating successfully in other states, then visit each section of Illinois to meet with physicians, dentists, pharmacists, nurses and hospital executives, to get first hand information on their local problems pertaining to health facilities and health needs. The study will be completed during the year, and the Committee should have an interesting report to present to the House of Delegates at the next annual meeting.

The Board of Trustees of the American Medical Association has carefully developed a plan for making a country-wide health survey which is to be carried into every county in the United States. Several superficial surveys have been made in the past, but this is the first time a country wide survey has been undertaken. The work in each state is to be under direct supervision of the state medical society, and proper blanks for tabulating the desired information will be sent to each country medical society in the near future. If all of these units will cooperate properly, definite information can be procured relative to medical facilities and medical needs that can be carefully studied with the idea in mind of improving medical services in many communities.

Individual blanks will be given to every member of the Medical and Dental professions, then all hospitals, health departments, and other organizations or groups doing any type of medical work, will be thoroughly questioned to get the desired information.

It is first necessary to acquaint the county medical societies and individual physicians as to the work that should be done in this survey, then send them the proper blanks and instructions so that they may proceed without unnecessary delay to procure the desired information. Additional comments on this survey will be found in the reports of the President and of the Committee on Indigent Medical Care published in this hand book, and all should be carefully read as early as possible.

In addition to the study of plans in various states for providing medical care to the indigent, the Council has asked the special committee to investigate plans for providing medical care to those people in low income groups, and to be prepared to make recommendations relative to the development of plans to improve this type of service in Illinois. This is now being done in a satisfactory manner in many communities throughout the country and it is the opinion of many present day students of medical economics that when plans for caring for the indigent and those in low income groups are developed and placed in operation, it will do much to relieve the cry for some form of socialized medicine.

During the past year a Committee on Interprofessional Relations has been created by the Council to get a closer cooperation between the medical and dental professions in Illinois. The past year a number of joint meetings of physicians and dentists have been held in various parts of the state and these have been well attended, and the interest has been generally satisfactory. In a few states, in addition to the members of the dental profession, the nursing associations, pharmaceutical associations, hospital executives and the veterinarians have been included in the interprofessional groups, with a plan which has been operating successfully.

The Illinois State Dental Society has a committee to form a closer cooperation with the Illinois State Medical Society, and we have received a number of letters from officials of the Dental Society relative to methods by which this can be done. Realizing that the present day economic problems of medicine are similar to those in dentistry, and perhaps likewise to the other professional groups mentioned above, it seems desirable that we should have a closer cooperation between all of the groups during the next year.

The Committee on Constitution and By-Laws has recommended a change in the By-Laws of the Society to give more definite methods of discipline of members than are given at the present time. It seems desirable that our component county societies should carefully review their by-laws to see that they are strictly in conformity to those of the parent organization. We respectfully urge each member of this House of Delegates to carefully review the proposed changes, and be prepared to take whatever action on the recommendations of the Committee that seem advisable.

The arrangement of the hand book and its size has been changed for this meeting and on account of the additional committees rendering their first report this year, it seems desirable to make the change which we believe should be followed in the future.

THE COUNCIL

The Council has held two special meetings since the last annual meeting, and at the regular meeting held in March, the order of procedure for Council meetings was changed and it was unanimously agreed that the Council should hold meetings every two months on account of the many important matters which have been brought to the attention of the Council in recent years. It is rare indeed, that a single member is absent from any of the meetings, and only then for an unavoidable cause. Each member has given earnest consideration to all problems before any definite action has been taken. A recent review of the Council membership elicited the information that Dr. John S. Nagel, Councilor for the 3rd District, is the oldest member in years of service, as he is completing his 22nd consecutive year as a member. In reviewing the minutes of all Council meet-

ings from its organization, we find that Dr. Nagel has served as a Councilor longer than any other member, and his record as an executive is only exceeded by our Treasurer, Dr. A. J. Markley, who has served in that capacity continuously since 1912.

During the past year the Council has had many important matters brought before it which have required a considerable amount of study, yet demanded definite action. The work of the Council has been increasing each year for the past decade and the actions taken have shown conclusively that the Illinois State Medical Society has used good judgment in the selection of its Councilors.

THE COMPONENT COUNTY SOCIETIES

Illinois is one of the few states which is completely self-supporting, for it is not only a leading agricultural state, but is third in the production of coal, ranks high as an industrial state, in the productio nof oil and as a fruit growing state. It is quite evident with these diversified industries within our state, that we have many types of conditions in Illinois. Every county medical society has endeavored to solve its own problems as pertaining to medical care. Even in those counties which have been affected most by the depression, we find physicians whose offices are well equipped, who keep good records and who are continually striving to serve their patients in the best possible manner.

In nearly every county medical society, regular meetings are held, and the members attend meetings in adjoining counties frequently. We know several physicians in small counties who will attend as many as 40 meetings in other counties during the year, and it is not unusual to find them at a medical meeting more than 100 miles from their own home.

From personal investigations in some of the counties having the highest mortality and morbidity rates in the entire state, we are thoroughly convinced that the high incidence of disease in these counties is in no way the result of poor medical care, but is primarily the result of ignorance, indifference and lack of cooperative incentives on the part of many of the people.

We have at this time, 90 component medical societies in Illinois, in addition to the 15 branch societies of the Chicago Medical Society, and many hundreds of medical meetings have been held during the year. The Educational Committee has been of much service especially, to smaller county societies, in arranging programs and aiding in sending out notices for the meetings. These meetings are usually well attended, and there is an increasing interest on the part of the members, as shown by the attendance, character of programs, and discussions.

The refresher courses in Obstetrics and Pediatrics have been well received in those sections of the state where they have been presented during the past year. It is quite obvious that with the cooperation of the Committee on Maternal Welfare and its county chairmen, there will be an increasing interest in these courses during the next year.

THE FIFTY YEAR CLUB

During the past five months, the Fifty Year Club Committee has placed its plan in operation to honor all members of the Society who have practiced for fifty years, and those fifty year men who are not now members, but who are recommended for membership by the county medical society. When possible, special meetings have been arranged to honor these men in their own society, and in most instances, the actual presentation of the membership certificate and emblem has been made by the Councilor for the District.

At this time, a total of 196 Fifty Year Club members have been honored, and there are a few more who will receive their membership in the club within the near future. During the five months of the operation of this club, six deaths of members have been reported. We have received dozens of letters from members of the Club, thanking the Society for the special consideration which has been given to them.

We have endeavored to get information from these men relative to some of the high lights of their practice, and much information has been accumulated which should be retained as a permanent record for the benefit of future generations. The oldest member received in the Fifty Year Club in years of service, is Dr. O. L. Pelton of Elgin, who has started his 67th year of practice. One member has been in service 66 years, and several have been reported who have completed 64 years of practice. We recently received a letter from a member of the Club residing in Chicago, who has started his 65th year of practice, and who can be found in his downtown office each afternoon, six days of the week. We have received many letters from other State Medical Societies asking for the plan of operation of this Club and giving the information that they too, desire to honor the older men in the medical profession in their respective states.

THE SECRETARY'S OFFICE

The assistants in the office of your Secretary have endeavored to give every service possible to the many component societies, and frequently to individual members. Remittances have been handled as speedily as possible and membership cards mailed out upon receipt of the proper information from the county society secretaries. Mailing lists have been sent to many societies asking for same, when they have desired to mail meeting announcements to physicians in adjoining counties.

The records of the Society are constantly being revised so they may be kept up to date at all times. All important records are placed in a large fire-proof vault to preserve them indefinitely. It is most unfortunate that many of the early membership records of the Society were lost in a fire some years ago, but we have been able to check various old ledgers of Treasurer's records, Council proceedings, etc., and much information concerning membership of the older members of the society has been accumulated.

We recently received a bound copy of the original minutes of the St. Clair County Medical Society from 1865 to 1910, which contains a great deal of valuable information relative to the membership of the pioneer

physicians of that section of the state. If other county societies have similar records over a long period of time, we would suggest that copies of same be sent to the Secretary's office in the near future, so that they may be retained with other important records in a permanent file.

THE ANNUAL MEETING

For the 18th time since 1850, the Annual Meeting is held in the Capitol City of Illinois. The Sangamon County Medical Society has had much experience in the arrangement of annual meetings, and nothing has been overlooked to make this annual meeting a highly successful one, from the standpoint of local arrangements. With the ever increasing meetings held as a part of the annual session of the Society, and with the many scientific and technical exhibits now being arranged for the meetings, it is becoming more difficult each year to find adequate facilities for the Annual Meeting.

The Hall of Health is a new venture this year, and it is arranged for the sole purpose of showing the public what the medical and allied professions have been doing to safeguard their health interests. The Committee on Scientific Exhibits has assumed responsibility for the Hall of Health this year, in addition to their many duties pertaining to the arrangement of scientific exhibits for the members of the Society. In the report of the Committee published in this hand book, a request is made that next year, this activity be referred to the Educational Committee, with perhaps a separate committee to aid in the selection of the necessary exhibits.

The scientific exhibits displayed at our annual meetings compare favorably with those which are made an important feature of national meetings, and the committee deserves the highest praise from the Society for their efforts to select and display the outstanding exhibits which are to be seen at this meeting.

SUMMARY

The past year has been a busy as well as a highly successful one for the Illinois State Medical Society. This report shows a net gain in membership of 284 for the year, with quite a number of new members reported from various Societies since the last count was made. The present membership is the largest in the history of the Society, and it is not impossible to report a total in 1939 of 8,000 if the membership committees of the component societies will carefully look over their respective lists of eligible non-members and attempt to get them to join the county medical society.

Several important committees have been added to the already long list during the year, and with the ever increasing duties of Organized Medicine, these should be continued as long as their services seem necessary.

During the past year, many active members of this Society have been called to their Eternal Reward. Within one week, the Society lost two former Past-Presidents, Dr. W. L. Noble who was President in 1917, and Dr. E. B. Coolley, who was President in 1918. These men were always interested in their State Medical Society and its activities and served well in their respective official capacities. The Council developed suitable memorials following their death, which appeared in the Illinois Medical Journal.

Time will not permit the naming of the many other loyal workers who were called by the Grim Reaper during the past year, a number of them former officers in their respective county societies, but they served their respective societies as well as their loyal patients over a long period of time, and their memories will be held in reverence for a long time to come.

We again desire to thank the many faithful county medical society secretaries for their splendid cooperation during the past year and once more we wish to state that it is only through a spirit of complete cooperation that an organization can expect to survive and carry on to the best advantage.

The annual audit was recently completed by Mr. Fred N. Setterdahl of Rock Island, a Certified Public Accountant, who has conducted his 17th annual audit for this Society, and the report of Mr. Setterdahl to the House of Delegates is attached to this report.

MEMBERSHIP DATA

Members Reported in Good Standing May, 1937		7,356
Added During the Year:		
New Members	553	
Reinstatements	67	620
		7,976
Dropped During the Year:		
By Death	113	
By Removal or Resignation	66	
By Expulsion	3	
For Non-Payment of Dues	154	336
Members Carried on April 30, 1938		7,640
Net Gain		284

FINANCIAL REPORT OF THE SECRETARY

Receipts from County Societies

Adams	$ 804.00	Iroquois	205.00
Alexander	136.00	Jackson	110.00
Bond	64.00	Jasper	65.00
Boone	109.00	Jefferson-Hamilton	229.50
Bureau	299.00	Jersey	57.00
Carroll	104.00	Jo Daviess	163.00
Cass	159.00	Johnson	52.00
Champaign	1,032.00	Kane	1,661.00
Chicago Medical Society	29,540.00	Kankakee	281.00
Christian	10.00	Knox	254.50
Clark	117.00	Lake	494.00
Clay	126.00	LaSalle	1,013.50
Clinton	172.00	Lawrence	101.00
Coles-Cumberland	305.00	Lee	$ 218.00
Crawford	169.00	Livingston	205.00
DeKalb	343.00	Logan	212.00
DeWitt	90.00	McDonough	167.00
Douglas	144.00	McHenry	5.00
DuPage	441.00	McLean	620.00
Edgar	155.00	Macon	917.00
Edwards	32.00	Macoupin	161.00
Effingham	146.00	Madison	643.00
Fayette	57.00	Marion	214.00
Ford	194.00	Massac	35.00
Franklin	75.00	Mason	85.00
Fulton	188.00	Menard	44.00
Gallatin	47.00	Mercer	64.00
Greene	106.00	Monroe	64.00
Hancock	130.00	Montgomery	79.00
Hardin	10.00	Morgan	281.00
Henry	338.00	Moultrie	40.00
Henderson	32.00	Ogle	149.00
		Peoria	1,164.00

Perry		Tazewell	218.00
Piatt	156.00	Union	15.00
Pike	224.00	Vermilion	771.00
Pulaski	32.00	Wabash	50.00
Randolph	20.00	Warren	199.00
Richland	88.00	Wayne	82.50
Rock Island	583.00	Washington	96.00
St. Clair	1,016.00	White	98.00
Sangamon	915.00	Whiteside	215.00
Saline	132.50	Williamson	364.00
Schuyler	40.00	Will-Grundy	698.00
Shelby	112.00	Winnebago	829.00
Stephenson	315.00	Woodford	128.00

Total	$53,124.50
Subscriptions	134.15
Exhibits	2,527.50
Interest, Treasurer's Account	50.00
Interest, Bonds	2,481.25
Journal	17,800.00
Health Blanks	.50
Total Receipts	76,117.90

RECEIPTS AND PAYMENTS

May 1, 1937 to April 30, 1938

RECEIPTS

County Societies	$53 124.50	
Exhibits	2,527.50	
Subscriptions	134.15	
Interest:		
Treasurer's Account	50.00	
Bonds	2,481.25	
Journal Advertising	17,800.00	
Health Blanks	.50	
Total Receipts		$ 76,117.90

DISTRIBUTION OF RECEIPTS

General Fund	$26,724.50	
Medico-Legal Fund	12,891.94	
Legislative Fund	8,594.63	
Journal Fund	27,906.83	
Total Distribution		76,117.90
Cash Balance, May 1, 1937		43,077.07
Total		$119,194.97

PAYMENTS

General Fund	32,293.62	
Medico-Legal Fund	6,233.15	
Legislative Fund	9,463.62	
Journal Fund	20,771.41	
Total Payments		68,761.80
Cash Balance, April 30, 1938		50,433.17

CASH BALANCES APRIL 30, 1938

General Fund	5,959.84	
Medico-Legal Fund	15,650.66	
Legislative Fund	11,955.73	
Journal Fund	16,866.94	
Total Cash Balance		$ 50,433.17

Respectfully submitted,

Harold M. Camp, M. D.,
Secretary.

FRED N. SETTERDAHL

PUBLIC ACCOUNTANT

224 Robinson Bldg.
Rock Island, Ill.

May 4, 1938

To Members of the House of Delegates,
Illinois State Medical Society:

CERTIFICATE OF AUDIT

I have audited the accounts of your Society for the year ended April 30, 1938, as follows:

Secretary's Accounts—Dr. H. M. Camp, Secretary.

Journal Accounts—Dr. C. J. Whalen, Editor.

Educational Committee—Miss Jean McArthur, Secretary.

Treasurer's Accounts—Dr. A. J. Markley, Treasurer.

SECRETARY'S ACCOUNTS:

Receipts: I verified the dues received from County Societies with duplicate receipts and checked same with the card ledger. Also compared the Secretary's report as published. Other receipts consist of Exhibit Rentals, Subscription to Journal, etc. Payments: Orders are drawn by Secretary for payments which are supported by approved vouchers, invoices, etc.

The increase in the Expenses for the year is due to the additional activities of the Society during the past year, which include the Maternal Welfare Committee, the Fifty Year Club, meetings of the Committees, and the survey of medical care which will soon be under way in every county in Illinois.

JOURNAL ACCOUNTS:

Receipts: Consist of collections made by the Editor for Journal advertising. Payments: Made by the Editor for commissions in securing advertising, and Postage. All other payments are made from Secretary's office.

During the year $17,800.00 was transferred from the Journal account to the Treasurer's account to be credited to the Journal Fund.

EDUCATIONAL COMMITTEE:

Receipts: Consist of appropriation made from the General Fund. Payments: Are made by checks supported by approved invoices, etc.

TREASURER'S ACCOUNTS:

Consist of bank accounts which have been reconciled with the Secretary's accounts.

Interest has been received regularly on the Investment Fund bonds with one exception during the past year. The interest from the bonds and bank savings certificate amounted to $2,531.25. The market value of the bonds represents 96 per cent. of the par value.

All funds are deposited in the name of the Society and Bonds are held in trust by the State Bank and Trust Company of Evanston, Illinois. All cash accounts were verified together with the bonds and found to agree.

The General Funds are on deposit with the State Bank and Trust Company of Evanston, and the National Bank of Monmouth. The Educational Fund and Journal Fund accounts of the Editor are on deposit with the First National Bank, Chicago, Illinois.

The records have been well kept and in my opinion my detailed report furnished your Council represents the true transactions for the year.

Respectfully submitted,

Fred N. Setterdahl,
Licensed Public Accountant.

Dr. Camp: The only correction I wish to make is this: When the report was written the membership was reported as 7,640. Since that time we have received about 80 new members, so that today the membership is 7,720. That is the peak membership of all time.

REPORT OF THE TREASURER

Year Ended April 30, 1938

To the Members of the House of Delegates:

Your Treasurer wishes to make the following report:

RECEIPTS

From Secretary		$55,786.65
From Editor		17,800.00
Interest on Deposits		50.00
Interest on Bonds		2,481.25
Total Receipts		76,117.90
Balance May 1, 1937		43,077.07
Total		$119,194.97

PAYMENTS

General Fund	32,293.62	
Medico-Legal Fund	6,233.15	
Legislative Fund	9,463.62	
Journal Fund	20,771.41	
Total Payments		68,761.80
Cash Balance April 30, 1938		50,443.17

All Funds are deposited in the name of the Illinois State Medical Society.

Deposited with the State Bank and Trust Company of Evanston, Illinois	24,752.81
Deposited with the National Bank of Monmouth of Monmouth, Illinois	24,529.81
Cash on Hand—Checks received and deposited after April 30, 1938	1,518.00
Total	50,800.62
Less Checks outstanding	367.45
Net Cash Balance as shown above	50,433.17
Held in Trust, at the State Bank and Trust Company, Evanston, Illinois—Bonds at par value	64,000.00
Total Cash and Bonds	$114,433.17

Respectfully submitted,

A. J. Markley, M. D.,
Treasurer.

REPORT OF THE CHAIRMAN OF THE COUNCIL

To the Members of the House of Delegates:

During the past year, a number of changes have been made in the routine of business that is handled by the Council, and some problems have arisen that are entirely new in character.

For many years, it has been customary for the Chairmen of all active committees to report at each Council meeting. This had the advantage of encouraging the committee and keeping the Council in closer touch with all activities. During the past two or three years however, the problems before the Council have been so numerous, and so many new and unexpected events have come up, that it has become impossible to complete all the old and new business at one session, and occasional special meetings have had to be called. After careful consideration, a system has been adopted specifying that certain committees report at definite times, and that any reports that are necessarily rather voluminous, be abstracted before being presented to the Council. This alone is saving a great amount of time which the Council is devoting to business affairs of a more urgent nature. The regular meeting dates have been changed to Sunday for the convenience of a majority of the members.

The malpractice defense problem, that was forced upon us so unexpectedly a year ago, has been given a great deal of time and thought, and a solution has been accepted as being the best obtainable. (This is not perfect and does not exactly suit many of us, but it is apparently the best arrangement we can obtain at the present time.) The Medico-Legal Committee, informed us last year that we have been engaged in the illegal practice of law in the defense of our members in malpractice suits. As this is one of the important services the Society has rendered its members, it is important that other arrangements be made that will approximate in satisfaction the previous methods. After many meetings with representatives of the Medico-Legal Committee, a plan, the best that can be devised at present, will be presented to this House for its approval. It is to be hoped that the House of Delegates does approve it, as it represents much time and thought upon the part of the Committee and the Council. This plan will enable the Committee to give our membership the most important phases of Medico-Legal protection which they have had in the past.

One of the mandatory provisions under the Social Security Act is that which provides for a concentrated effort to improve the maternal and infant mortality rates. Since this is now a Federal law, it is logical for the State Society to lend it all the help possible, and to assume leadership in this important matter. With this in mind, a Maternal Welfare Committee has been appointed, with a Chairman for each Councilor district, and a County Chairman from each County Society. It is the intention of this committee to bring this work into each of the one hundred and two counties of Illinois. Our setup in this work is relatively new, but it is starting out in an efficient manner, has received wide publicity to date, and many State Societies have asked for our plan in detail. This committee should be complimented and encouraged by the House of Delegates, as it is potentially one of the most potent methods in our power, to combat anti-medical propaganda.

The "Fifty Year Club" which was developed during the year, has been an effective method of honoring the veterans in the society, and it has been a source of pleasure and satisfaction to all who have participated in it. It should be continued as a method of helping all our older members celebrate their Fiftieth anniversaries.

All County Societies should carefully inspect their By-Laws so that they will be in strict conformity with those of the State Society. From recent observations of the Council, it seems advisable that each society provide within their By-Laws, a definite plan for disciplining members. In developing such provisions it would be well for them to contact Dr. Chas. B. Reed's Commit-

tee on Constitution and By-Laws for suggestions and comments. This may obviate future reversals by the House of Delegates and the Judicial Council of the A. M. A., when aggrieved members who have been disciplined, may appeal to these higher courts from the action taken by the County Society.

It is also recommended that County Societies use proper methods of investigation before taking in applicants for membership, as it is easier to keep out an undesirable applicant than to expel him later.

A serious and major problem that is being acted upon at present has to do with the illegal practice of medicine by Corporations and Fraternal organizations. This has many serious possibilities which may be commented upon verbally, during the course of this meeting. The Council is taking every legal method to combat this deplorable condition.

I wish to take advantage of this opportunity to thank all Councilors and all Committee Chairmen for their consideration and cooperation during the past year. All these men have given freely of their valuable time whenever called upon to do so for the interests of the State Society. It is my sincere opinion that the Society should be congratulated upon the high calibre of its official family.

The Medico-Legal and the Medical Economics Committees have been unusually efficient, and the Legislative Committee remains one of our major bulwarks. Dr. Whalen, who has recently been given an efficient assistant in Dr. Maloy, has rendered his usual yoeman service to the Society. I wish in particular to commend the Secretary, for at great personal sacrifice and obvious financial loss, he has been tireless in his efforts to keep this organization at a peak of efficiency. His office does more work, with less help than that of any comparable society, and this alone, speaks for his ability.

The recently inaugurated plan of having a County Obstetrical Nursing Service seems to be working out nicely in the Counties where it has been tried. This has many excellent possibilities but in order to avoid additional problems, it should be kept under the control of the County Societies.

It is believed that with a continuation of the Society's methods as practiced in the past, the future can be faced with equanimity.

Respectfully submitted,
E. P. Coleman, M. D.,
Chairman of the Council.

Dr. Coleman: I have been instructed by the Council to make a brief supplementary report. Two resolutions will be presented to you, both of which the Council recommends to you for approval. The Pediatricians and the Obstetricians would each like to have a Section for their particular program. The Council recommends to the House of Delegates that this request be granted, and that they be given a morning and afternoon session just as is done by the American Medical Association, that is to let the Pediatricians have the morning and the Obstetricians the afternoon of each day. In that way they can have the same space and the same equipment. With many additional sections we will have the problem of providing space for meetings.

Furthermore, the Council would like to recommend that the reports of the Committee on Ethical Relations and the Committee on Constitution and By-Laws, in which they recommend that the President-elect be inducted before the close of the meeting of the House of Delegates be adopted, and that the new President close the meeting.

They also recommend that their recommendation in regard to disciplining of members be give every serious consideration. It was thought that these matters were of sufficient importance to bring to you separately.

Dr. E. S. Hamilton, Kankakee: I move that the report of the Chairman of the Council be accepted. (Motion seconded).

Dr. G. Henry Mundt, Chicago: Does that cover the entire report of the Chairman or only that portion referring to the recommendations of the Council. We cannot review the recommendations until we have had opportunity to study them.

Dr. J. S. Nagel, Chicago: With the consent of the maker of the motion, I move that the supplementary report of the Chairman of the Council be referred to the Council Committee for action and report on Thursday morning. (Motion seconded and carried).

The President: That will go to Committee "C".

REPORT OF COUNCILOR OF THE FIRST DISTRICT

To the Members of the House of Delegates:

The County Societies of the First District have held the usual number of medical meetings. In a few counties these are held once a month except during two or three months in the summer while in other counties the meetings are every two or three months. More meetings are held in the more populous counties.

All members of the district are interested in medical economics. However, most of the meetings are on scientific subjects, and are well attended. It is a growing custom to invite the neighboring counties to attend the larger medical meetings, and the practice of holding a dinner at these meetings appears to be gaining in favor. In Kane County the dinners are usually held in conjunction with the Women's Auxiliary.

Clinical conferences, conducted by the pathologist of

the various hospitals is gaining in its importance. Many of these pathological conferences are as good as could be produced in any of our teaching centers, and physicians realize that they play an important part in the work of a medical society, and that they should be fostered by the different County Medical Societies in every possible way. Programs are put on either by members of the local society, or by invited guests. It would seem to your councilor that an effort should be made to have part of the papers at every county medical society meeting presented by members of the county society, and that this year more than ever we should make an effort to have every doctor in the County belong to this Society.

The Counties of this District have all cooperated with the various public health activities. The cancer campaign carried on during April was better organized and more successful than the campaign last year. However, there is decided room for improvement, and physicians are acquiring a better knowledge as to the purpose of this campaign. Gradually the effects of this campaign will be noted and I believe will benefit the physicians themselves.

A growing interest is shown in contract practice, either by Corporations or Lodges. The physicians as a whole feeling that such practices are to be condemned, and that it is a definite function of the County Medical Society to assist the State Society and the National Society in their efforts to do away with these evils. In the meantime everyone is interested in finding a better plan for giving medical services to all the people all the time. Most of the counties feel that a plan should be adopted which will be workable and uniform for every County in the State.

Respectfully submitted,
Edward H. Weld, M. D.,
Councilor of the First District.

REPORT OF COUNCILOR OF THE SECOND DISTRICT

To the Members of the House of Delegates:

During the past year all of the county medical societies of the district have functioned well. The societies are well organized, have had efficient officers and have held meetings regularly, in most instances monthly, except during the summer. Very satisfactory scientific programs have been provided and because of this there is an increasing tendency for the doctors in one county to attend the meetings in another. Several series of meetings on Obstetrics and Pediatrics have been held in the district with distinct profit and at present a district meeting is being planned.

The crippled children problem is being quite well handled, either by the county societies themselves or through cooperation with some lay organization.

Those doctors eligible to the "Fifty Year Club" have been honored and everyone feels that the club idea was a good one and well worth while.

One county is now considering a group hospitalization plan. The county society has gone on record as approving such a plan provided it limits its benefits to hospital care only.

The Women's Auxiliary has been organized in most of the counties and apparently is of growing value and importance. The Women's Field Army has been successfully organized in the district this year and several public meetings have been held.

Respectfully submitted,
Edgar C. Cook, M. D.
Councilor of the Second District.

REPORT OF COUNCILORS OF THIRD DISTRICT

To the Members of the House of Delegates:

The membership of the Chicago Medical Society is as follows:

Members paid as of April 1, 1938	3,242
Members not yet paid, but in good standing	1,114
Emeritus members	46
Life members	16
Total active members	4,418

It is our belief that the investigation of free and semi-free clinics, and the massive report of the careful detailed survey conducted by the Economics Committee under the able direction of Dr. Herman Kretschmer, have gone far toward correcting abuses of the clinics, and restricting their benefits to the truly deserving. This monumental piece of work has attracted considerable national attention, and requests for copies of the report have been numerous.

In spite of the tested and upheld legality of the Medical Practice Act, corporations continue to flagrantly practice medicine in Chicago. We are at a loss to know what further steps to take to attempt to remove this sort of unfair competition.

Distribution of the "Fifty Year Club" tokens has been turned over to your councilors, and it is their purpose to attend meetings of each branch and personally make the presentations.

The extensive Medical Survey requested from each state society by the American Medical Association will be a gigantic task in Cook County, in that in addition to individual reports from doctors and dentists, hospitals, nursing organizations, health departments of villages and townships, welfare and relief organizations, public, private and parochial schools, colleges, universities, fraternal organizations, etc., literally hundreds of industrial and commercial concerns which provide any sort of medical care for their employees must be contacted. The request was turned over to the Medical Economics Committee which was fairly staggered by the extensive scope of the survey, and the enormous expense which must necessarily be entailed. It is our purpose, however, to properly conduct this work; and plans for a trained statistical director, an army of workers, stenographers and clerks, and adequate office space are in formation. At this writing, it is not yet known just how the necessary funds amounting to several thousands of dollars will be furnished. It is hoped that the other county societies will seriously and thoroughly make their surveys so that the combined reports from our

keystone state of the midwest will be complete, accurate, and lucid.

Respectfully submitted,
John S. Nagel, M. D.,
Percy E. Hopkins, M. D.,
L. E. Day, M. D.,
Councilors of the Third District.

REPORT OF COUNCILOR OF THE FOURTH DISTRICT

To the Members of the House of Delegates:

The report of the Councilor of the Fourth District for the past year is largely a repetition of his report as Chairman of the Council, with but few exceptions. All Council and Special meetings have been attended, and all of the County societies in this District have been visited whenever an invitation was issued. When asked to do so, the Councilor has aided in the presentation of the "Fifty Year Club" insignia. This club has invariably caused an increase in local interest as well as eliciting much favorable comment in the press.

An attempt has been made to reach the public in as many ways as possible and present to them the views of the society on Socialized Medicine. To this end, the Councilor has made a number of talks on this subject, has delegated others, and has furnished material for the same purpose. The reaction of the public has been routinely favorable.

The component societies are in much the same condition as last year. Peoria County, the largest, has meetings twice a month and is handling its local problems in a very efficient manner. It is represented on most, if not all, of the public organizations that are interested in civic welfare, and it is furnishing high grade medical leadership. The scientific meetings of this society are addressed by clinicians of note from throughout the middlewest, and the meetings are well attended.

Rock Island County, the next largest, has had regular meetings with good programs. Its work in trying to eliminate the evils of contract practice in its home county have been handled in a most commendable manner, and action has been taken by the Council to help them further this work.

Knox, Henry, Warren, McDonough, Mercer, Stark, Henderson, and Fulton Counties have held regular meetings and have had satisfactory attendance throughout the year.

Hancock County has had several meetings and the Councilor attended one of these and talked on the subject of Medical Economics which elicited considerable interest and some practical methods of collection and public policy were discussed.

Schuyler, the biggest little county in the State, has kept its organization intact and its members can be found regularly attending all the most interesting meetings of the surrounding territory for many miles. Distance and weather constituting no handicaps.

The current depression has not affected the rural districts as much as it has the urban areas. Most of our members are concerned about the depression that will come when we get the bill for the expenses incurred in spending our way out of this one.

Respectfully submitted,
E. P. Coleman, M. D.,
Councilor of the Fourth District.

REPORT OF COUNCILOR OF THE FIFTH DISTRICT

To the Members of the House of Delegates:

During the past year the Councilor has been making an effort to get acquainted with the members of the various county societies in the Fifth District. He has attended meetings both regular and special in the different counties. He has attended all meetings of the Council except one.

In the Fifth District there has been a gain of eighteen new members, seven of whom have been in McLean County. The District has lost by death only three members during the year.

I have spoken before professional and lay groups on the socialization of medicine and it is evident that the public is much interested in this subject. It is true that the average person has given very little attention to the question and it is my impression that the majority of the laymen are not in favor of any such method of treating the sick. It is my opinion that physicians should take a more aggressive attitude in presenting information to the public as to the view point of the profession on this matter. Every physician should be willing to do his part in giving to the public information on questions of this kind.

Montgomery, Menard and McLean Counties have held special meetings in honor of the members of the Fifty Year Club. It is very fitting that the State Society has proposed a plan to honor these members who have been so long in practice. In McLean County the only member who has been so honored is Dr. Rhoda G. Yolton, the first lady physician in the State to receive the emblem.

Respectfully submitted,
Ralph P. Peairs, M. D.,
Councilor of the Fifth District.

REPORT OF COUNCILOR OF THE SIXTH DISTRICT

To the Members of the House of Delegates:

The Councilor of the Sixth District reports that conditions as a whole in the District are considerably improved. Each county society has been visited and I am pleased to report that the quality of programs given has been excellent, the attendance above the average, and considerably more interest shown by the younger men in the profession. Their presence on active committees and on the programs has no doubt been responsible.

The arrangement for the care of the indigent with the Board of Supervisors still continues to work in a satisfactory manner, particularly in Adams County.

One county society has held infrequent meetings, and officers have not been duly elected for 1938. I

have suggested they make the necessary connections and join their neighboring county society. This plan I feel, will be of benefit in all sparsely settled counties where only a few doctors practice.

The establishment of first aid stations on the highway seems to have met with little success. However, in the meantime, other programs, by the State Health Department, have endeavored to get a foothold in the District, particularly in Adams County, without consulting the profession or the county medical society. I would suggest that before the State Department of Health inaugurates any health programs in the state, that the local profession be consulted and if the program has merit, it will meet with their cooperation. There seems to be a general feeling among the profession that the various programs of the Health Department now in process of organization are leading in the wrong direction, and are being fostered by the laity, rather than the profession.

In my report to the House of Delegates in 1936, I suggested that they appoint a committee to work out some plan whereby the low income group may receive better medical care, before we are confronted with a federal plan. At present, a WPA worker is compelled to pay for his medical service. Under the present rate of pay, this is next to impossible.

I wish, therefore, this House of Delegates would discuss this problem freely.

The distribution of the buttons to the Fifty Year Club members has been met with enthusiasm, not only by the 50 year men, but by the members as a whole. Special meetings and special programs and dinners have been given to honor these men.

Your Councilor desires to thank all county society secretaries and county society members for their hearty cooperation during the past year.

Respectfully submitted,

Thomas B. Knox, M. D.,
Councilor of the Sixth District.

REPORT OF COUNCILOR OF THE SEVENTH DISTRICT

To the Members of the House of Delegates:

The Councilor of the Seventh District begs to report conditions in his District much improved. The improvement has been characterized by increased interest and active cooperation in the activities of the local, district and State Society. All the societies have assumed active leadership in the district Maternal Welfare by appointing County Chairmen in each County; in the Physically Handicapped Program, and in the Venereal Disease Control.

Group hospitalization has been sponsored by one of the larger societies and the control is in the hands of organized medicine in that society. The scientific meetings of the Society have been well attended. The Macon County Society meets twice monthly, and its membership has additional scientific interest by regular pathological conferences held in the various hospitals.

The Fifty Year Club has stimulated active interest in the senior members of the District and before the annual meeting, we hope to have honored all those eligible for membership.

Your Councilor has attended all the regular Council meetings and the special committee meetings to which he has been assigned, and has devoted a great deal of time to publicize the work of Venereal Disease Control. I regret very much that the work of the Women's Field Army has not received the cooperation which it merits.

The physicians of the District are to be congratulated for; first, their united opposition to Senator Lewis' bill to make physicians "Civil Officers" of the United States; second, their approval of the action of the A. M. A. House of Delegates, relative to continued opposition to all forms of socialized medicine; and third, for having accepted the responsibility of rendering medical services for the poor. In most townships and counties, the principle of guaranteeing to the poor the free choice of physicians has prevailed.

One of the major activities of the State Society of the coming year should be the development of a clean-cut program for caring for the indigent sick.

Respectfully submitted,

I. H. Neece, M. D.,
Councilor of the Seventh District.

REPORT OF COUNCILOR OF THE EIGHTH DISTRICT

To the Members of the House of Delegates:

The county societies comprising the Eighth Councilor District have had a most successful year. The membership is at a high level and a greater spirit of cooperation is shown.

The following information is obtained from the secretaries of the component societies of this District:

Society	Membship.	New	Loss	No. Mtgs.	Av. Attdce.	50 Yr. Club	Deaths
Champaign	90	5	2	14	38	4	3
Clark	12	0	0	3	9	0	0
Coles-Cumberland	43	2	2	10	28	1	2
Crawford	18	0	1	10	11	0	1
Douglas	22						
Edgar	21	3	0	2	5	3	1
Jasper	4	1	0	0		1	1
Lawrence	16	0	2	8	9	1	0
Richland	12	Society re-organized late in 1937.					
Vermilion	92	6	5	10	60	8	2

From this report some facts may be noted. The total number of members in this district is 330. New members during the past year are 17. Loss of membership is 12. There are 18 members eligible to the Fifty Year Club. There were 10 deaths in 1937 and they were as follows:

Dr. M. M. Ricketts, Sadorus.
Dr. C. H. Metzel, Sidney.
Dr. W. L. Gray, Champaign.
Dr. W. J. Carter, Mattoon.
Dr. H. J. Carter, Mattoon.
Dr. C. E. Hardin, Flat Rock.

Dr. Burns, Willow Hill.
Dr. E. B. Coolley, Danville.
Dr. Solomon Jones, Danville.
Dr. W. R. Apple, Paris.

The establishment of the Fifty Year Club by the Council of the Illinois State Medical Society has met with a general approval of the members of the different societies and the eligible members have expressed much appreciation for this recognition.

The programs for the regular monthly meetings have been much improved during the past year. In many of the counties the program committees make definite plans for the year covering much of the general field of medicine and surgery. Some of the societies have had the Board of Supervisors as guests at one of their meetings. Such meetings, I think are very desirable in each County and should result in a much better understanding in the care of the indigent. One society had its county bar association as special guests. The legal and medical professions have much in common and I think such joint meetings would help to bring about a much better mutual understanding.

All the counties in the district except one are participating in the Refresher Courses in Maternal and Child Welfare. In most instances, two to four counties unite to put on the course jointly, alternating the place of meeting. The programs have been presented by outstanding men and the members of the profession have shown unusual interest.

During July and August (vacation time) many of the societies have a "get-together" meeting, such as picnics, fish fries, etc. Such meetings, I think, are very worthwhile. Those who can play together or enjoy some form of recreation with each other, should be able to work more agreeably.

It has been our custom to hold two Councilor meetings each year; one in the south part of the district in the fall, and one in the north part of the district in the spring. This year, however, just one Councilor meeting was held at Mattoon, which is located centrally and all the members in the different societies of the district were invited. At this meeting Dr. R. K. Packard, President of the Illinois State Medical Society presented, "What Organized Medicine Has Done for the Medical Profession," and Dr. E. S. Hamilton, Chairman of the Medical Economics Committee spoke on, "Medical Economics and the Future of Medicine." Both addresses were very interesting and informative and it is to be regretted that the majority of the counties in the district were not better represented.

It has been my privilege to attend all the regular and special meetings of the Council during the past year. I have also been able to attend some of the regular monthly meetings of the county societies in the district and I am very glad to report an evidence of good fellowship present in each society visited.

Respectfully submitted,

C. E. Wilkinson, M. D.,
Councilor of the Eighth District.

REPORT OF COUNCILOR OF THE NINTH DISTRICT

To the Members of the House of Delegates:

The Ninth Councilor District is composed of fourteen counties in the Southern and Eastern part of Illinois. I feel quite sure that the medical profession in this district has been more interested, more active and more successful in putting over good medical programs during the past year than any previous year since I have represented it.

The Jefferson-Hamilton, Franklin, Williamson, Saline and Wayne County Societies have had splendid programs at regular intervals during the past year which have been well attended. The other counties which are much smaller and have smaller memberships, meet occasionally. However, most of the physicians in those counties attend the meetings held in the larger, nearby counties.

The physicians in the Ninth District have not only had good medical programs for physicians but they have sponsored a number of programs for lay educational purposes which have been well attended.

Ten of the fourteen counties in the Ninth District have been thoroughly organized by the Field Army of Women to fight cancer and a number of meetings have been held which have been well attended by the public. The subject, "What Everyone Should Know About Cancer," has been discussed.

The Maternal and Child Hygiene Welfare Committee sponsored by the State Society under the leadership of Dr. T. B. Williamson, has a good organization in each county. A number of good programs on obstetrics and pediatrics have been held in the various parts of the district as well as programs open to the public at which the "Significance of Pre-Natal Care" has been discussed.

Fourteen physicians in the Ninth District have been found eligible to membership in the Fifty Year Club and have been awarded certificates and buttons. Special meetings have been held on these occasions at which not only physicians, but also their immediate families were present. These meetings have been happy occasions and the responses of some of these fifty year men hav been most interesting.

The physicians of the Ninth District have also spoken before the various civic groups on State Medicine, as adopted in several of the decadent countries in Europe and as is now being advocated by the New Dealers in Washington, D. C.

Practically all the members of the legislature from this district have gone on record as opposed to State Medicine. Congressmen Arnold, Parsons and Keller each represent some counties of the Ninth District. Arnold has gone on record as being absolutely opposed to State Medicine but Parsons and Keller so far have been non-committal on the subject.

Taking it all in all, I think the medical profession in the Ninth District is fairly well organized and is put-

ting forth their best efforts to render good service to the public.

Respectfully submitted,
Andy Hall, M. D.,
Councilor of the Ninth District.

REPORT OF COUNCILOR OF THE TENTH DISTRICT

To the Members of the House of Delegates:

The Tenth Councilor District consists of Alexander, Jackson, Monroe, Perry, Pulaski, Randolph, St. Clair, Union, and Washington Counties. All are river border counties excepting Washington and Perry, with the resulting difficulties of organization and service. Two of these counties, Union and Alexander, were directly affected by the flood waters of 1937. Jackson and Perry joined in the care of the thousands of homeless and the medical profession of all counties in Southern Illinois did creditable work in the rescue and medical care of the unfortunate. Agitators for State Medicine were left without a straw to stand on when they looked over the field for excuses to use in their efforts to bring about Federal control of the medical profession.

Each county of the District is organized.

Monroe, with but ten members, held ten regular meetings during the year. Dr. Edward Bollinger represented the Society in the last State Convention. Dr. Jacob C. Fultz of Waterloo, having practiced fifty-three years, received his Fifty Year Button and Certificate.

St. Clair County, the largest county in the District, with over one hundred members, gained five during the year. They lost one in the death of Dr. A. C. Echternacht, a faithful member in middle life. The Belleville branch of the St. Clair Society, held regular meetings and were addressed by able speakers. Dr. G. C. Otrich is its Secretary.

Pulaski County, the smallest of the District, has but four members in good standing. Although not being able to hold regular county programs, these four members have been active in giving talks to Women's and Mothers' Clubs.

Union County lost one member by death—Dr. Watson Grear. Gained one new member. The Society held eight good scientific programs and their annual June picnic and fish fry.

Jackson County held ten meetings as usual with an average attendance of twenty at each meeting. Four new members were added during the year with five reinstatements. Two members passed away—Dr. Raymond B. Essick of Murphysboro, president of the Southern Illinois Medical Association, fifty-two years of age; also Dr. Ira W. Ellis of Murphysboro, an honorary member who had practiced medicine fifty-six years.

Randolph County has received two new members last year and two deaths have occurred, Dr. Louis Smith of Chester, sixty-six years of age; also Dr. William A. James of Chester who had practiced medicine fifty-seven years and received his Fifty Year Button and Certificate a short time before his death.

Randolph County Society also gave Fifty Year Buttons and Certificates to Dr. J. W. Weir of Sparta who had practiced fifty-six years, and Dr. Albert E. Fritze of Chester who had practiced fifty-three years. Dr. Weir and Dr. Fritze are both in active practice.

Alexander County had sixteen members last year. Every eligible physician in the county is a member. There were no deaths or additions during the year. The Society took an active part in public health affairs. Held two crippled children's clinics during the year and was especially active in conducting the social hygiene clinic.

Washington County received two new members during the year and two members moved out of the county. Dr. Simon P. Schroeder of Nashville received his Fifty Year Certificate and Button recently.

Perry County boasts of every practicing physician in the county being either an active or honorary member. Two Honorary Members received their Fifty Year Buttons and Certificates, namely, Dr. William W. Kane of Pinckneyville who has practiced fifty-two years and Dr. James T. Leigh of DuQuoin, who has practiced fifty-six years.

The best scientific service during the year, from reports received, were those given by the Maternal and Child Welfare Organization. Several physicians from Chicago and a few from St. Louis gave excellent programs and each county in the District is organized for educational service and hopes to have even a better season the coming year for maternal care and child welfare.

The counties of the District are also organized to assist in the Cancer Educational Organization, and the profession is not only in sympathy with, but doing what they can to promote education of the laity so that the number of cancer deaths will be lessened in the near future.

J. S. Templeton, M. D.,
Councilor of the Tenth District.

Dr. Templeton: I wish to add that in the Belleville District they have a branch society with 50 members. During the past year they have held monthly meetings with an attendance of over 50 percent.

REPORT OF COUNCILOR OF THE ELEVENTH DISTRICT

To the Members of the House of Delegates:

The component counties of this district have had such a successful year that they have run almost automatically. The Councilor has visited all except one of the societies and has found them all in a most vigorous condition. Membership is at the highest reported level, and all the men appear interested in medical problems. They have been attending their local meetings as well as those in nearby counties in increasing numbers.

We believe that the meetings held on Obstetrical and Pediatric problems in cooperation with the Department of Public Health have been a great help to the members of the society both educationally and socially. Four such meetings have been held in this District. All have been well attended and the members are enthusiastic

about this kind of meetings. The District Chairman, Dr. Carey of Joliet has been a hard worker and has a county chairman active in each county of the district.

The Councilor has attended all but one meeting of the Council, which is by the way the first one he has missed during his tenture of office. He has also attended every meeting of the regular and special committees of which he is a member. In addition he has given a great amount of time to the Economics Committee, editing the monthly column, assigning subjects to the other members of the Committee and making talks on economic subjects in different parts of the State. This has been most interesting even tho it took considerable time away from his practice. He feels that his district is in the best condition it has ever been and hopes that this will continue.

Below is a detailed report of the condition of the component societies, as reported to the Councilor by the County Secretaries, in response to a questionnaire sent them.

Co.	*Members*	*Gain*	*Loss*	*Meetings*
DuPage	62	5	1	10
Ford		2	1	3
Kankakee	65	8	1	12
Iroquois	19	3	3	8
Will-Grundy	115	10	2	Weekly except in summer

In addition every society had some special activities either educational or social.

The Councilor wishes to thank the officers and members of the component county societies for their cooperation the past year.

Respectfully submitted,
E. S. Hamilton, M. D.,
Councilor of the Eleventh District.

REPORTS OF COUNCILORS AT LARGE

To the Members of the House of Delegates:

The duties of Councilor at Large following my presidency have not been arduous. The meetings of the Council in general in spite of quite serious problems have been harmonious. I have accepted the appointment on Cancer Survey and the State Crippled Children, that we might have first hand information of their activities. Some of our officers should be on all of these various medical projects. It is by sitting in these meetings we can prevent lay members from assuming leadership without our perspective.

Again I wish to accent that each of you should take time to appear on all Club, Lodge or Social meetings that the people will have an understanding of our side. Writing in Medical Journals does not reach the voters. The work of the Scientific Service Committee and the literature of the Educational Committee should be used in your local papers.

Respectfully submitted,
Rolland Lester Green, M. D.,
Councilor at Large.

To the Members of the House of Delegates:

During the last three years a movement has been in progress in Chicago for the improvement of maternal and child welfare which has matured this spring. The advisory committee, finding themselves legally unfit to carry out the details of the matter, advised the assistance of the Board of Health.

This business has finally resulted in a code and regulation of hospitals, the conduct and technic of maternities, the realignment of physicians doing midwifery and insistence upon those physicians being directly responsible to the Board of Health.

The conferences were participated in by members of the Chicago Gynecological Society, the Chicago Pediatric Society, the Chicago Medical Society and the Chicago Hospital Council.

The rules as finally laid down aroused some opposition in the Chicago Medical Society inasmuch as they appeared to infringe upon the rights and privileges of licensed physicians of Illinois and the whole matter was turned over to a reference committee for investigation. This committee correlated the objections to the regulation under five heads, namely,—

1. The regulation of hospitals.
2. The authority of the Board of Health to prescribe such regulations to licensed physicians.
3. The practicability and the reasonableness of the rules presented.
4. Whether the questions of technic could not be left to more advantage with the staffs of the hospitals.
5. The possibility of changing or revising the code if necessity or convenience demanded.

The most important of these divisions and the one particularly interesting to physicians outside of Chicago relates to the power of a Board of Health to impose such regulations legally.

It has been generally accepted in Chicago by physicians as well as their legal advisors that the medical man, licensed by the State, was a free agent in the conduct of his business and in carrying out his contractual, personal, and technical relations with his patients.

This medical attitude was brought up directly to Dr. Bundesen and it was discovered that on March 4, 1937 a new law had been passed by the State Legislature which changes in this matter all our medical preconceptions and status.

It is highly important for the House of Delegates to know that according to this "Cities and Villages Act" the Board of Health of any city, by and with the consent of the Council thereof, can control and manage absolutely all matters pertaining to the public health work of the city which the Board deems necessary or advisable. It may control the location, the licensing, and staff of hospitals, the purpose of their construction as well as the sanitary conditions, the nature and kind of treatment given. It may require monthly reports of patients admitted, their diseases, the sex of babies born, the cause of maternal or infant death and pass upon the necessity for the same. It controls the character of records kept, the histories taken and has free access at all times to those records which have been hitherto regarded as the legal possession of the doctor, patient and hospital, and may use them to pass on the validity

of the treatment used in the case. An abstract of this law has been sent to Doctor Camp.

Respectfully submitted,
Charles B. Reed, M. D.,
Councilor at Large.

To the Members of the House of Delegates:

As one of your Councilors at Large, I am compelled to report that I have not been able to accomplish the work I had planned for this year. Yet I have visited quite a number of societies and I am convinced that organized medicine is making itself understood by the profession and the public as never before. Those who have stood out against us on the offensive side, are now on the defensive side, and losing ground daily. This is encouraging to all of us.

Organized medicine is no longer fighting the cause of the people alone. Other professions are joining with us, business and industry are lending their aid. This should encourage us to plan for a more extensive fight in the year ahead, and I am sure this will be done.

The danger I see ahead is not an open fight for Socialized Medicine as such, but the planning of a program through which the organized medicine will lead itself into socialization. In other words, those who are working to this end are establishing programs and pretending to entrust us to conduct them in our own way.

I refer to Health Units, old type clinics in new clothes. As a profession we are lending ourselves to these projects and fear that in the end we will find ourselves in control of the forces we have been fighting. I cannot go into this in detail, but I ask that we do some serious thinking alone this line, fully realizing that I may be over cautious and gun shy.

As chairman of the Interprofessional Relations Committee, I cannot report much, for I have not done much, but Dr. Noyes of the Dental profession, who is associated with me on this committee, has done some valuable work and I am sure that we can expect some progress in the future.

My work as Councilor at Large will end soon, and I want to express my appreciation for the many pleasant hours that I have had with this group. I have gained much for the little I have given.

Respectfully submitted,
Chas. S. Skaggs, M. D.,
Councilor at Large.

REPORT OF PUBLIC RELATIONS COMMITTEE

To the Members of the House of Delegates:

The Committee on Public Relations has had a quiet year since the last annual report was presented at the 1937 meeting. The principal duties of the Committee have been pertaining to the adjustment of legitimate claims against insurance companies for the care of injured employees. Since the Committee was formed for this purpose, we have contacted a number of Accident Insurance Companies and our relations have been quite harmonious.

We believe that most of these Companies now realize that all just claims must be paid for care to injured insured employees, and it is no longer possible for them to tell the doctor how much he shall receive when his just bill is rendered.

The Courts have ruled in this State that when physicians render bills for care to injured employees, the bill if in conformity to the fee schedule of that particular community, is a just bill and must be paid. Many Claim Adjusters for insurance companies have attempted too often in the past to get the physicians to reduce their bills, regardless of the charges that were made, and they have formerly insisted that a standard fee for industrial services had been approved by the State Industrial Commission.

During recent years we have attempted to show various Insurance Companies that standard fee schedules for the community must prevail in these cases and have succeeded in getting many bills paid in full.

When any member of the Illinois State Medical Society has trouble in getting payment in full for services rendered to Companies carrying insurance, and their fees were in accordance with the fee schedule of the community, our Committee will gladly do everything possible in assisting the member to get the settlement to which he is entitled.

An itemized statement of the charges made in each case, with a statement from the County Medical Society secretary that the bill is just and conforms to the usual rates for that type of service within the county, should be sent to the Chairman of this Committee, and we will render all possible assistance.

If the House of Delegates desires to be given additional information regarding any of our activities, we will gladly submit same. If it is desirable to give additional duties to this Committee, we will be most happy to enlarge our services to members.

Respectfully submitted,
W. S. Bougher, M. D., Chm.,
Fred H. Muller, M. D.,
H. W. Woodruff, M. D.,
Public Relations Committee.

REPORT OF LEGISLATIVE COMMITTEE

To the Members of the House of Delegates:

Since adjournment of the last General Assembly in Illinois a more conservative tone in legislative expression has developed. The business "recession" has had a sobering influence on the aggressive reformers. It has convinced a substantial element of the public as well as of their elected representatives that immediate brilliant results from the heroic experimental treatment of a very sick patient may be followed by a serious relapse which might not have occurred under more orthodox therapy of demonstrated effectiveness.

This trend is noteworthy in the national congress. Deliberation and debate on new and radical proposals are now the rule rather than the exception. Less is accepted by the lawmakers on blind faith and new theories are examined more critically in the light of past experience than heretofore in recent years. A de-

cided tendency toward demanding "consultation" before undertaking an exploratory operation has arisen in national affairs. The change is welcomed as a symptom of improvement.

Late in July, prior to any signs of change in the political outlook or attitude, Senator Lewis of Illinois introduced in Congress a resolution that would have Federalized all physicians, making each a civil officer and requiring him under penalty to treat at government expense all impoverished patients who might apply. Obviously impractical and fraught with grave implications with respect to the American form of government, this proposal was promptly and vigorously opposed by your Legislative Committee. Within twenty-four hours after announcement of the resolution in the newspapers a strongly worded telegram was dispatched to Senator Lewis.

Later a copy of the proposal as introduced in the Senate was obtained and studied critically. Upon this basis a set of resolutions were drawn up and adopted by the Council of the Illinois State Medical Society. Copies were forwarded to the President of the United States, to each Senator and Representative in Congress from Illinois and to the secretaries of all State medical societies. These resolutions were adopted verbatim or in principle by a majority of State medical societies and they were published widely throughout the country.

This vigorous handling of the situation undoubtedly influenced the course of the proposal in Congress. It has not been passed and there seems little likelihood that it will be revived in the near future.

During the last regular session of the Illinois General Assembly, which adjuorned on June 30, 1937, numerous bills relating to medical matters were introduced. Three or four of these represented the most skillful and astute legislative maneuvering ever encountered in the Illinois General Assembly in behalf of the cults and inimical to the public interests.

A congested calendar and extraordinary confusion during the closing weeks of the session presented opportunities for tricky maneuvers quickly seized upon by the proponents of undesirable legislation. These bills included measures that would have lowered the standards of medical practice by licensing osteopaths and chiropractors to do general work, by prohibiting indirectly the use of animals for experimental purposes, by levying a gross income tax on physicians and other professional groups, by professionalizing X-ray technicians above the level of their function in the field of medicine and in various other ways.

All of these bills were successfully opposed. While wisdom prevailed and undesirable legislation was defeated, the experience in the last General Assembly demonstrated the constant danger, especially during periods of popular unrest, of adopting impracticable and inimical laws.

Outstanding among the bills enacted was the Saltiel amendment to the marriage laws which requires prenuptial physical examinations. Good in principle, this law was poorly drawn and has proved to be unsatisfactory with respect to enforcement. Originally written without counsel from official spokesmen from organized medicine of the State Department of Public Health, it was hastily revised at the last minute when passage seemed eminent and was finally enacted in a form that leaves much to be desired. This law ought to be amended so that enforcement will be practicable. As it is, evasion of the law is easy from the standpoint of all concerned. The number of marriage licenses issued in the State has declined two-thirds since it became effective on July 1, 1937.

The legislative outlook is now more favorable than for several years. Whether this prospect continues will depend in no small measure upon an improvement in economic affairs. In any event, strong efforts at changing the course of medical practice may be expected. The pressure will merely be less violent and more conservative in tone. Those who believe in orderly evolution and who cherish the traditions of American life must be constantly on the alert if the high standards of medical practice are maintained and satisfactory progress made toward providing the American people with the best and most extensive medical care which skill and training can command.

Your Legislative Committee has enjoyed the complete cooperation and assistance of the officers of the Society and of physicians generally. This splendid relationship has made possible the successful functioning of the Committee.

Respectfully submitted,
John R. Neal, M. D., Chm.,
Mather Pfieffenberger, M. D.,
M. J. Hubeny, M. D.,
Legislative Committee.

REPORT OF MEDICAL EDUCATION AND HOSPITALS COMMITTEE

To the Memembers of the House of Delegates:

Among the purposes of this Society are the extension of medical knowledge, the advancement of medical science, the elevation of the standards of medical education and the enforcement of just medical laws. In 1848, N. S. Davis, I., stated: "A pervading spirit of progress is everywhere at work in the medical world. In our own country, the manifestations of an active and onward movement are revealing themselves.. . . And what are the ulterior designs to be accomplished by medical associations? There are four prominent objects ever to be kept before us in these associations. First: To elevate the profession in intellectual power. Second: To deepen the foundations of medical education. Third: To advance the profession in social influence. And fourth: To resist the encroachments of quackery."

"To all these we should add a fifth, viz: To procure unity and concert of action, without which every effort to promote the permanent good of the profession, or the welfare of the community will fail." (The Annalist, 3:35 (Oct. 15) 1848).

Has the Illinois State Medical Society been fulfilling its purposes? Has it accomplished the "ulterior

designs" outlined ninety years ago by one of its founders?

In 1849, Samuel Jackon and J. L. Atlee reported: "The medical profession was deeply impressed with the belief that it had gradually become lowered in its standing. It no longer occupied the high position in public confidence that was once accorded it. Everywhere it met with successful competition from empirics and pretenders; while absurd, fallacious, and dangerous doctrines were countenanced, not by the ignorant and vulgar alone, but by the educated and intelligent.

. . . "The subject of medical education is not limited to a mere consideration of the interests of students and schools. They are not the only parties it concerns; it occupies a much wider field, and embraces interests and relations of much deeper import. To discuss this question in its true spirit, and to reach all its consequences, it must be examined in all its bearings. Results without this course must be invalid. . . On this question it was regarded that the public, the science, and the profession had interests as deeply involved as the students and the schools; and that the Association was bound to look to and protect them." (Transactions, A. M. A., 1849, p. 359.)

In an address on the occasion of the centenary celebration of the College of Medicine of the Ohio State University, Dr. Henry S. Houghton stated: "Let us turn to another deficit of medical education which the golden future may find a way to supply. The physician of tradition was a man of learning; the educational drift of today tends to produce men of skill and highly specific knowledge. It goes without saying that technical skill is essential, but it is not enough. The practitioner of medicine must know not only diagnosis, but men; he must be in the highest sense of the words a man of the world, leading a life enriched by close touch with the interests and affairs of humanity." (Science, 79:491 (June 1) 1934).

Medical education is today directed toward the science of medicine, that field of knowledge which is capable of being used for the prevention, alleviation, and cure of diseases; and consequently for the prolongation of human life. The art of medicine, the direct or personal application of such knowledge, either in the execution of sanitary measures for the prevention of disease, or in the application of remedies of the bedside of the sick, has been neglected.

"The arrangement of the private practice of medicine depends for its efficient operation upon a high degree of idealism on the part of the physician. The profession has always had this idealism. But medicine has been torn from its old moorings and thrust into the modern world of business, and the private practice of medicine, both by forces within and without itself, has been transformed into business enterprise.

"The physician today stands at a crossroads. Thru no fault of his own he has been maneuvered into a position where his traditional spirit and ideals are threatened. Now he must look into his soul and once again decide what sort of person he wishes to be; by what incentives he wishes to be motivated; in what spirit he wishes to carry on the art of healing. And having decided these most fundamental of all things, he must in cooperation with society contrive a set of economic arrangements for the performance of his services which will permit him to be what he wants to be." (Health Insurance, The Next Step in Social Security. By Louis S. Reed, New York and London: Harper, and Brothers Publishers, 1937, page 107).

The medical profession, economists, sociologists and social workers, to the contrary notwithstanding, are convinced that it is in the best interest of the patient that the art of healing continue to be rendered by the idealistic physician in private practice. Do the medical schools of Illinois whose graduates may be licensed to practice in Illinois give an education that will produce such physicians? Has the medical profession been doing all that it should "to procure unity and concert of action, without which every effort to promote the permanent good of the profession, or the welfare of the community, will fail"?

In 1936, it is reported that graduates of the medical schools of the State were licensed in Illinois and in the United States as follows:

In Illinois	Passed	Failed	% Failed	No. Boards
In Illinois	Passed	Failed	% Failed	No. Boards
Loyola University	58	1	1.7	
Northwestern University	90	0	0.0	
U. of Chicago, Rush	62	0	0.0	
U. of Chicago	16	0	0.0	
U. of Illinois	109	0	0.0	
Chicago Med. School	84	2	2.3	
Extinct Schools	1	1	50.0	
Foreign Schools	17	2	11.7	
All Schools in U. S.	471	6	1.3	
Loyola University	101	8	7.3	18
Northwestern Uni.	190	3	1.6	28
U. of Chicago, Rush	185	5	2.6	27
U. of Chicago	26	1	3.7	9
U. of Illinois	145	3	2.0	17
Chicago Med. School	84	2	2.3	1
Extinct Schools	13	12	48.0	10
Foreign Schools	380	208	35.4	29
All Schools	6210	696	10.1	

Of the 471 licensed, by examination, to practice in Illinois in 1936, 443 represent additions to the medical profession of the state. The 84 graduates of the Chicago Medical School licensed in Illinois therefore constitute 18.9% of the additions to the profession of the State in that year. (J. A. M. A., 108:1411 (Apr. 24) 1937).

Of the medical schools of Illinois, all except the Chicago Medical School are recognized by our parent body, the American Medical Association. That association has on repeated examination, found that the Chicago Medical School does not satisfy its requirements which are said to be very similar to those of the Department of Registration and Education of the State of Illinois. It seems that this school certainly does not comply with the following paragraph from the Requirements for Approved Medical Colleges adopted by the Department of Registration and Education, August 22, 1930:

"Hospital—Own, or control, under definite contract, the clinical teaching of a designated hospital, in reasonable proximity to the college, in which there are not

less than one hundred beds and a daily average of not less than twenty-five patients who may be available for clinical purposes. The clinical material shall be of such character as to afford the student opportunity to see and study the ordinary range of surgical and medical cases."

It should certainly be examined to ascertain whether or not it fulfills the other requirements of the Department. If, in the eight years since their adoption, this school has been unable to comply in every way with these requirements, it should no longer be recognized by the Department, even though it is now, in some respects, better than it was in 1930.

Do those associated with such a medical school, in an administrative or teaching capacity, not violate the Constitutions of the American Medical Association and of this Society? Article 2 of its Constitution states: "The objects of the Association are to promote the science and art of medicine and the betterment of public health." Article II of the Constitution of the Illinois State Medical Society states, "The purposes of this Society shall be . . . to extend medical knowledge and advance medical science; to elevate the standard of medical education and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members and to protect them against imposition; . . ."

Of the schools recognized by the American Medical Association, Loyola University School of Medicine had a higher percentage of failures both in Illinois and in the country at large than did the other Illinois schools. It would seem that it should endeavor to raise its standards.

The clinical instruction at Loyola University School of Medicine, Northwestern University Medical School, Rush Medical College of the University of Chicago is given by licensed practitioners of medicine engaged in private practice who, with few exceptions, receive no compensation for their services. At the University of Illinois College of Medicine some instruction is given by such volunteers, but more by salaried members of the faculty, who are permitted to engage in private practice and for whose services in the Research and Educational Hospital and the school's out-patient department, no fees are collected. However, even in these schools in which the clinical instruction is given by men engaged in the private practice of medicine, there is too much emphasis on the disease the patient has, too much attention to special fields from the viewpoint of specialists who tend to learn more and more about less and less, not enough attention to the patient who has the disease or to the effects of pathology in one part or of social factors on the patient as a whole. This results in the education of general specialists; not of general practitioners; certainly not of family doctors, the men who do our most effective work. While the disease the patient has should not be neglected in the education of the doctor of medicine, much more attention should be given to the importance of the patient as a whole.

In the School of Medicine of the Division of the Biological Sciences of the University of Chicago, the patient who has the disease appears to have been completely neglected by the pedagogues of the Foundation which sold and, in part, paid for its program. There the patients are the patients of the University, not the patients of the members of its faculty. In any large departmentalized clinic, whether it be free, part or full pay, whether it be a firm or a corporation, the patient is not an individual but just another case. It was originally stated that this school was not intended as a place in which ordinary practitioners of medicine were to be educated but one for the training of specialists, research workers and teachers of medicine. But many still believe that the best specialists of the future will develop from practitioners of medicine as they have in the past. Furthermore, the training of specialists is now considered post- and not under-graduate medical education. While training in methods of research and education may have distinct value, real teachers and productive investigators are born and not made. We have no means of selecting from the candidates for the freshman class of the medical colleges of the United States, those who have the qualities and inspiration of great teachers and productive investigators. So, aside from the fact that it is an educational corporation engaged in the practice of medicine for revenue, which has been found illegal by the Supreme Court of this State, it appears to have little in its favor as a school in which to educate doctors of medicine. Furthermore, it seems strange that an association that until 1937 agreed to furnish medical defense to its members charged with mal-practice, retains as members those on the faculty of a school whose license to practice may be revoked according to Par. 10, Sec. 16 (a) of the Medical Practice Act of Illinois, which reads: "Department may withhold or revoke license . . . upon any professional connection or association with, or lending one's name to, another for the illegal practice by another of the treatment of human ailments as a business, or professional connection or association with any person, firm or corporation holding himself, themselves, or itself out in any manner contrary to this Act."

Graduates of extinct medical schools are so few that they need not be discussed. Graduates of foreign schools constitute an increasingly important problem. Some of them are citizens of the United States who studied medicine abroad possibly because they failed to be admitted to a recognized school in this country; others are immigrants who for one reason or another have left their native land and wish to continue to practice of their profession in the land of their adoption. Few of the European countries admit to practice graduates of schools in the United States. Why should we recognize their schools, even though the graduates presenting themselves are already citizens of this country?

The Scientific Service Committee of the Educational Committee of the Society has for years been promoting postgraduate education in Illinois. It is hoped that this work may be continued and extended. The training of physicians for qualifications as specialists is another educational problem that now presents itself. In the metropolitan area of Chicago, it is not much of a prob-

lem, for all facilities are at hand and one may continue in active practice while doing the work required for qualification. Outside of that area the problem is very different, as it is difficult to get the necessary experience and training outside of the teaching centers. It should be possible for men to engage in private practice in almost any city of the state and take such work under qualified preceptors in the specialty and under qualified pathologists, bacteriologists, radiologists, etc., of the community. Such preceptors might even have appointments as extra mural members of the faculty of the graduate school of medicine of one of the universities.

There is another question with respect to medical education that has not been mentioned, the fifth or intern year. It is reported that the standards of the Department of Registration and Education for hospitals approved for intern training are on a par with the "Essentials in a Hospital Approved for Interns" of the American Medical Association. It is also reported that certain hospitals of bed capacity and average patient capacity smaller than those approved by the American Medical Association have been approved by the Department. Is this good policy? Can a fifth year student obtain the experience and training he should receive on a rotating service in so small an institution? In fact, does he get anything except a surgical and obstetrical service in such an institution? According to the Journal of the American Medical Association (109:668 & 683, Aug. 28, 1937) there were internships for 7,167 men in the 712 hospitals it approved for intern training and 5,484 of whom had obtained internships. Graduates of the Chicago Medical School can not serve as interns in hospitals approved for intern training by the American Medical Association. By recognizing hospitals not so approved for intern training is not the Department just making it possible for graduates of a school, not recognized by our parent organization, to qualify for licensure in Illinois? The Illinois State Medical Society if it is to live up to the Provisions of its Constitution, should urge the Department of Registration and Education of the State of Illinois to promptly correct such procedures.

Respectfully submitted,
N. S. Davis, III, M. D., Chm.
W. R. Marshall, M. D.,
H. O. Munson, M. D.,
Committee on Medical Education and Hospitals.

REPORT OF MEDICO-LEGAL COMMITTEE

To the Members of the House of Delegates:

During the year from May 1st, 1937, to May 1st, 1938, the Committee reports there have been fifty-one communications from doctors concerning claims and suits brought to the attention of the Committee.

The Committee has answered these threats and has investigated and attempted to help the members in any lawful way it has been called upon to do.

At the annual meeting of the House of Delegates of the Illnois State Medical Socicty at Peoria, May 18, 19 and 20, 1937, it was decided to discontinue the Medico-Legal defense plan heretofore followed by the Socicty, and the By-Laws were amended to that effect.

This action was taken because of the fact that in the consideration of a somewhat similar plan of a medical society of a sister state, the Committee on Unauthorized Practice and Professional Ethics and Grievances of the American Bar Association expressed the opinion that such plan amounted to the unauthorized practice of law.

There has been no complaint made so far as this Society is concerned, but it was deemed advisable to take the aforesaid action rather than have the Society subjected to any possible criticism. This action was taken after conference with counsel for this Society and the American Medical Association.

The Medico-Legal Committee will be continued and may assist the members in any lawful and proper way it can in suits or claims for civil malpractice brought or made against them, but it will not employ counsel or furnish legal defense.

A copy of the By-Law as amended is herewith enclosed defining the duties of the Medico-Legal Committee:

"Section 6. The Medico-Legal Committee shall consist of six members, three of whom shall reside in Cook County and three elsewhere. They shall be elected by the House of Delegates, two to be elected each year to serve for three years. At the first election held under this By-Law, two shall be elected for one year, two for two years, and two for three years. Each component society shall elect one member to serve as 'Advisor' to this committee.

"It shall be the duty of the Medico-Legal Committee of this Society to elect a chairman on the last day of each annual meeting, such chairman to hold office until after the next annual meeting of this Society and/or until his successor shall be elected. Said Committee shall make such rules for the conduct of the affairs entrusted to it herein as may be proper for the management of its business. In the event of a claim being made or suit being brought against a member of this Society for civil malpractice, such member shall immediately notify the chairman of the Medico-Legal Committee in writing and forward to him all information available for a proper understanding of the case. Said Committee shall keep a record of all claims and suits coming to its notice against its members, and may inquire into and investigate such claims, shall prepare statistics showing as far as possible the number and character of such claims and suits, and may assist in any lawful and proper way in the preparation of the defense of any claims or suits for civil malpractice presented or brought against any members of this Society in good standing, provided such member shall request the aid of said Committee. Said Committee shall make a report of its activities to the Council at its January meeting and to the House of Delegates at the Annual Meeting each year."

RECOMMENDATIONS OF THE MEDICO-LEGAL COMMITTEE

February 13, 1938

"We recommend that the Council pass a resolution to be submitted to the House of Delegates at the next annual meeting in May, that:

"1. All members shall report to the Chairman of the Medico-Legal Committee all claims or suits made or brought against any member of the Society for malpractice.

"2. A notice be printed on the membership card requiring that such reports be made.

"3. Upon receipt of such report, it shall be the duty of the Medico-Legal Committee to make an investigation obtaining all possible information in regard thereto.

"4. Such information to be obtained in order that the qualifications and status of the membership so involved may be determined, and such information be disseminated among the members of the Society in order that similar claims or suits may be avoided.

"5. It shall further be the duty of the Medico-Legal Committee, in addition to the keeping of a record of such claims and suits, to keep a record of all judgments in malpractice suits and the expenses incurred in connection therewith, and from time to time confer with representatives of insurance companies writing malpractice insurance for the purposes of obtaining the best and most economical protection for the members of the Society."

At a meeting of the Council of the Illinois State Medical Society, these recommendations were unanimously approved, February 13, 1938.

Respectfully submitted,
J. R. Ballinger, M. D., Chm.,
R. O. Hawthorne, M. D., Secy.,
Oscar Hawkinson, M. D.,
C. U. Collins, M. D.,
Arthur Geiger, M. D.,
Walter Wilhelmj, M. D.,
Medico-Legal Committee.

REPORT OF EDUCATIONAL COMMITTEE

To the Members of the House of Delegates:

An annual report of the Educational Committee can give only partially the results of contacts made by individual physicians and county medical societies. It is not possible to estimate the far-reaching effects of the varied program of health education sponsored by the Committee, except to say that thousands upon thousands of individuals heard popular health talks given by physicians in public meetings and over the radio and probably hundreds of thousands more read the health columns carried by so many of the Illinois newspapers.

The Educational Committee has developed many friends during the year who believe in America's system of medical service.

MEDICAL ECONOMICS

Numerous problems of the medical profession are also problems of the public. With this in mind the Committee has taken advantage of opportunities to furnish speakers on these questions to lay groups.

Mimeographed copies of important medical economic papers given before audiences in Illinois and other states have been sent to a large mailing list.

Special articles appearing in important popular magazines have also been mimeographed and mailed to individuals and libraries.

Radio talks were given on subjects relating to medical economics.

Special articles were released to Illinois newspapers.

MAILING LIST

13,629—Copies of medical literature were sent to a mailing list which included public libraries and individuals. Secretaries of county medical societies were asked to send in names of individuals in their counties who might be interested in receiving the material put out by the Committee. An addressing machine was purchased for the office, enabling the Committee to do more of this type of publicity.

NEWSPAPERS

More than 200 newspapers of the State carried a regular health column furnished by the Educational Committee. A daily, weekly, or monthly service was offered newspapers. Whenever possible the material appeared over the sponsorship of the local county medical society.

13,721—Releases went to Illinois newspapers.

94—Heath education columns were written and approved for publication.

Editors of newspapers were glad to receive notices of medical meetings and special events. Headlines given these announcements indicate their interest. It was never difficult to secure the publication of real "NEWS."

RADIO PROGRAMS

255—Radio programs were given over Chicago stations. Radio programs have their place in any educational project. The Committee has used the radio for twelve years and has a wide spread audience covering the entire United States. Each month the radio schedules were prepared and sent to 500 or more persons.

Following one broadcast, requests for copies of the talk were received from 60 cities in the states of California, Canada, Connecticut, Illinois, Indiana, Iowa, Massachusetts, Michigan, Nebraska, Ohio, Oklahoma, Texas, Wisconsin and Washington.

Radio programs were largely in the form of dialogues with the announcer and a doctor participating.

The papers were used by a number of county medical societies for local broadcast. Any society having access to a broadcasting station is offered this material, all of which has been approved by the Committee.

EXHIBITS

The exhibit in the window of the Marshall Field & Co. Annex Building, Chicago, was changed monthly. Timely topics were presented, Hay Fever, Spring Fever, Tuberculosis, Cancer, Periodic Health Examinations.

The Educational Committee assumed the responsibility of planning and preparing the exhibits which were announced as sponsored by the Chicago Medical Soci-

ety. A number of other state and county societies inquired about the window exhibits. The Committee and the Manager of the Marshall Field & Co. Annex Building found the public tremendously interested in the window.

Individual doctors, medical supply houses and the Exhibit Department of the American Medical Association were most cooperative in furnishing material.

The Committee prepared exhibits for the Mid-winter Meeting of the Chicago Dental Society which was attended by more than 10,000. A similar exhibit was also prepared for the Annual Meeting of the Mid-West Physical Education Association.

Special exhibits were secured for Y. M. C. A.'s and other groups from the American Medical Association.

PUBLIC LIBRARIES

4,704—Articles were sent to public and school libraries for bulletin boards or health files. Many comments were received on this service indicating that the material serves a purpose and is read.

PACKAGE LIBRARIES

Many doctors asked to use the package libraries on popular health topics. The material is constantly being revised and brought up to date. When not possible to furnish material, the requests were referred to the Bureau of Health and Public Instruction of the American Medical Association.

High school and college students asked for material on socialized medicine.

MOVING PICTURES

The Committee has no film library. Requests for moving picture films were referred to the State Department of Public Health.

SPEAKERS' BUREAU

471—Programs were arranged for lay audiences. The Committee asked for a guarantee of 50 adults in arranging these programs and to smaller groups sent copies of radio talks and material from HYGEIA to be used by members of the local clubs. Meetings varied in attendance from 50 to 2,000 persons.

Women's clubs, men's clubs, Parent Teacher Associations, schools and churches asked for programs on Cancer, Syphilis, Medical Economics.

Series of programs were planned for a number of Y. M. C. A.'s.

Speakers were scheduled for annual meetings of the Illinois Congress of Parents and Teachers and the Illinois Federation of Women's Clubs and for laity day meetings of the Woman's Auxiliary.

The Committee cooperated with the State Department of Health in promoting Health Week and with the Chicago Board of Education in promoting Youth Week with speakers on special health topics.

Secretaries and Presidents were asked to furnish the Committee with the lists of lay organizations in their communities. These contacts will be developed next year.

LAY ORGANIZATIONS

Furnished material to the Illinois State Nurses Association.

Cooperated with the N. Y. A. in arranging programs for Forums throughout Chicago.

Gave publicity to the Cancer problems sponsored by the Chicago Woman's Club.

Contacted all county society officers concerning the summer Round-Up of the Illinois Congress of Parents and Teachers.

Sponsored a number of radio talks on health topics for the Adult Education Council of Chicago.

Assisted with publicity in a number of special programs given by lay groups in the state.

Prepared special health material and furnished programs for the Health Chairmen of the Illinois Federation of Women's Clubs.

Furnished material to the Home Bureau Units of the State, the American Red Cross, W. P. A. workers.

Cooperated with the medical commission of the American Legion.

MATERNAL WELFARE

The Committee cooperated with the Child Hygiene Division of the State Department of Public Health in the special obstetric and pediatric programs offered county medical societies. Courses were sponsored by the following county groups: Jefferson-Hamilton-Wayne-Franklin-Saline; Morgan; Lee-Whiteside; La-Salle; Hancock; Jasper-Crawford-Lawrence; Ford-Iroquois; Coles-Cumberland; Union-Perry-Jackson; McLean; DeWitt-Logan; Sangamon; Menard-Mason; Fulton-McDonough.

A total of 81 obstetric papers and 70 pediatric papers were arranged through the office of the Educational Committee.

Thousands of notices were sent from the office to doctors.

Hundreds of announcements were released to Illinois newspapers.

Special educational articles on the importance of maternal and pre-natal care were released through the regular channels.

Publicity given to the Postgraduate one week courses offered at the University of Illinois.

ASSISTANCE TO COUNTY MEDICAL SOCIETIES

See report of Scientific Service Committee.

327—Scientific papers were scheduled through the office of the Educational Committee.

A revised list of speakers and subjects was prepared and sent throughout the state.

The Committee assisted county medical societies in promoting scientific meetings.

5,188—Notices were prepared by the Committee for society meetings.

Special news articles announcing scientific programs were released to newspapers.

Gave full cooperation to the Maternal Welfare Committee of the Illinois State Medical Society and the Maternal Welfare Committee of the State Department of Public Health.

Cooperated with the Medical Economics Committee and other committees of the Society.

Assisted in the promotion of special programs sponsored by county medical societies and lay organizations.

Respectfully submitted,
R. R. Ferguson, M. D., Chm.,
C. G. Farnum, M. D.
James H. Hutton, M. D.,
Otis O. Stanley, M. D.
Charles P. Blair, M. D.,
Jean McArthur, Secy.,
Educational Committee.

Dr. Hutton: The Committee has been handicapped during most of the past year because of the illness of Dr. Ferguson. His name is signed to the report, but he has done none of the work. He is better but has not yet recovered.

The President: We are glad to hear he is better and that the work is going on.

REPORT OF SCIENTIFIC SERVICE COMMITTEE

To the Members of the House of Delegates:

Your Scientific Service Committee has completed another active, and it trusts, a successful year. It has attempted to fulfill its primary function; to wit, the servicing of the 91 County Medical Societies. To this end, at the beginning of the present year, the Scientific Service Committee revised and augmented its list of speakers and widened its variety of subjects. This list today is probably as complete as that of any state medical organization. It includes the names of many of our outstanding clinicians and teachers from the various medical schools, universities and leading hospitals of the state. We are particularly pleased, however, with the fact that during this past year our list of speakers has been augmented with the names of many prominent men outside of our larger cities, men from counties widely scattered throughout the State of Illinois. These men are particularly qualified to discuss medical situations as they exist in the rural districts. Not only has our list of speakers been materially increased, but our subjects have been amplified and broadened so that today it is possible for any County Medical Society to arrange for any type of program, selecting their own subject and speakers of their own choosing, by contacting the Secretary, Jean McArthur. The entire expense of these programs, including the speakers, newspaper publicity, and even the mailing of notices, is borne by the State Society .

On December 2, 1937, at the suggestion of the United States Public Health Service, the Scientific Service Committee circularized the Secretaries of the 91 County Societies, offering them Pneumonia Symposia. These pragrams called for a discussion of the entire Pneumonia problem by a team consisting of a Pathologist and a Clinician. Eight County Societies availed themselves of this service.

We are at present able to provide similar symposia on Heart Disease. We are ready, upon request, to send a Cardiac Team, consisting of a Heart Specialist and a Pathologist, to discuss in a practical manner the big ever-present problem of Heart Disease. Last year, too, eight Heart Clinics were held at various County Societies. These Clinics were conducted as follows: Upon request of a County Society, a Heart Specialist was sent down and he examined, in the afternoon, in the presence of the local county physicians, a number of selected Heart Patients. In the evening at a dinner meeting, a discussion of the more common forms of Heart Disease closed the program.

Appended hereto is an itemized geographic list of County Societies serviced during the past year.

COUNTIES FURNISHED PROGRAMS DURING THE YEAR

Aurora Medical Society
Bureau
Carroll
Christian
Champaign
Crawford
Coles-Cumberland
Clark
Central Ill. Dist. Med. Socy.
DeWitt
DuPage
Douglas
Effingham
Elmhurst Hospital
Ford
Franklin
Fulton
Greene
Henry
Hancock
Iroquois
JoDaviess
Jasper
Jackson
Jefferson-Hamilton
Knox
Kankakee
LaSalle
Lawrence
Lee
Logan
Mason
Menard
Mercer
Madison
Marion
Montgomery
Monroe
Morgan
McDonough
McLean
Ogle
Perry
Peoria
Rock Island
Randolph
Sangamon
Stephenson
Saline
St. Clair
Southern Illinois Medical
St. Anthony's Hospital, Rockford
Schmitt Hosp., Beardstown
Scott, Iowa
St. Joseph's, Aurora
Tri-County
Union
Vermilion
Warren
Wayne
Whiteside
Washington
Will-Grundy
Williamson
4th Councilor District
8th Councilor District
9th Councilor District
10th Councilor District

PROGRAMS ITEMIZED AS TO SPECIALTIES

Allergy	3
Eye, Ear, Nose and Throat	3
Cancer	6
Dermatology	2
Economics and Legal	24
Gastro-Intestinal	9
Heart	18
Internal Medicine	17
Neurology, Psychiatry	4
Obstetrics	102
Pediatrics	86

Pneumonia	19
Physical Therapy	4
Orthopedics	9
Syphilis	8
Surgery	9
Urology	4
	327

Eighty-one of the above obstetrical papers were given in the Postgraduate Course offered by the State Medical Society and the State Department of Health. Seventy of the pediatric papers were of the same classification. The Obstetric and Pediatric Postgraduate Courses were sponsored by the following societies:

Jefferson-Hamilton-Wayne-Franklin-Saline
Morgan
Lee-Whiteside
LaSalle
Hancock
Jasper-Crawford-Lawrence
Ford-Iroquois
Coles-Cumberland
Union-Perry-Jackson
McLean
DeWitt-Logan
Sangamon
Menard-Mason
Fulton-McDonough

In conclusion, the Scientific Service Committee takes this opportunity of thanking not only the men and women from Chicago and the widely scattered County Societies who gave so freely of their time and energy in making this work a success, but also the individual County Societies and their Secretaries for their splendid cooperation.

Respectfully submitted,
Robert S. Berghoff, M. D., Chm.
S. E. Munson, M. D.,
R. K. Packard, M. D.,
H. N. Rafferty, M. D.,
Walter Stevenson, M. D.,
R. L. Green, M. D.,
Scientific Service Committee.

REPORT OF MEDICAL ECONOMICS COMMITTEE

To the Members of the House of Delegates:

Reporting the manifold interests and duties of this Committee is a most difficult task, for much if not most of the time of the Committee is spent in investigating new problems as they arise. Many of these are of little real importance to the membership at large, but this fact is often discovered only after a large amount of work on the part of some member of this committee. The most important problems to come before the committee have been reported in the monthly column as presented in your official publication. We continue to hope that a goodly number of the members read the same with some degree of regularity for it is quite a task to prepare the same monthly and it is most encouraging to think that it is read.

In addition to the attempt to keep abreast of the new problems as they arise, by assigning them to some special member of the Committee for investigation and report at the called meetings of the Committee, our special problem has been that of continuing the presentation of our problems to both the laity and the medical profession. In this work some men have been more active than others due either to geographical location or reputation in some special line. However, all members of the Committee have cooperated most wholeheartedly when requested. We hope that there has been considerable accomplished by this work. Surely, in most cases, the reception has been most cordial and it begins to look as if the public was realizing that the method of practicing medicine in the United States compares at least favorably with that in any other country in the world. This is very important in view of the articles appearing in the daily press as well as periodicals where often for their sensational value only statements are made which give a rather unfair impression of the conditions in the United States. To be sure this is not confined to the practice of medicine alone, but since we are particularly interested therein, it seems incumbent on us to refute either false or misstatements when they come to our attention.

One of the chief problems of the medical profession continues to be the care of the indigent poor. This has been approached in many different ways, dependent on the size of the community, the part of the state, and the stand of the politicians in that community. In some localities, the results have been more satisfactory than in others. A committee consisting of three members of this committee appointed by the Chairman of the Council have been investigating this problem both within and without the state. It is to be hoped that they will have a report to make at this meeting, so that it will be possible to present some definite conclusions as to which is the most successful plan and furnish the American Medical Association with a definite constructive plan for use in various sized communities of this and other states. This is, as you well know, in line with the recent request of that body. Meanwhile it remains the obligation of the local county societies to insist that the indigent receive good medical care even tho the pay received for the same seems inadequate, as it often is.

The Educational Committee of the Illinois State Medical Society has been most cooperative with the committee. We feel that their weekly bulletin, furnished free to those papers who wish the same, has carried the message of organized medicine to places where we as individuals would never gain admittance. We wish to thank them for this cooperation, particularly their efficient secretary.

The recent interest in the Reorganization Bill, which was defeated in the House by a narrow margin, shows that the people of our nation are becoming increasingly interested in the so-called reforms and are not entirely in favor of them. However, we should not be lulled into a state of well being by this defeat for it is reported fairy accurately, that a bill is ready for presen-

tation in Congress which will greatly interest and involve the medical profession. The details of the bill are not available but from the best available sources it will at last start so-called "Socialized Medicine." We hope that our friends in Congress will watch for this bill and inform us of its contents at the earliest possible moment. It is most encouraging to notice that more and more members of Congress are arising and telling their colleagues that we do not need any change in the methods of conducting the practice of medicine in the United States.

We hope that the members of the Illinois State Medical Society will show an ever increasing interest in their economic problems and will feel free to present them to this Committee during the coming year, addressing their letters to the Chairman, whoever he may be.

The chairman wishes to thank every member of the Committee for his cooperation during the past year, particularly those who have furnished articles for the Column and made talks throughout the state on economic problems. The officers of the Society, including the Council have been most helpful. Also the Editor of our Journal has allotted us space and edited our articles most faithfully. We ask the continuance of this cooperation to the new Committee, particularly the chairman.

Respectfully submitted,
E. S. Hamilton, M. D., Chm.,
H. M. Camp, M. D.,
E. P. Coleman, M. D.,
W. M. Hartman, M. D.,
J. R. Neal, M. D.,
I. H. Neece, M. D.,
R. K. Packard, M. D.,
Ralph Peairs, M. D.,
C. B. Reed, M. D.,
C. S. Skaggs, M. D.,
C. E. Wilkinson, M. D.,
Medical Economics Committee.

REPORT OF SPECIAL COMMITTEE ON INDIGENT MEDICAL CARE

To the Members of the House of Delegates:

Prior to 1933, medical relief in the current meaning of that expression was a matter largely of academic rather than practical interest and consideration. Since that time it has assumed a position of dominant importance in medical economics.

This shift in emphasis is the result of fundamental changes in social-government philosophy on the one hand and of the violent changing complexion of economic conditions on the other. Since 1933, the government has assumed the responsibility of providing the essentials of life to all of its citizens. During the same period economic circumstances conspired to convert into governmental charges a considerable proportion of the population. The problem of providing medical care to these charges became acute and the solution thereof was imperative.

Prior to 1933, medical care for the poor had been provided largely by private physicians as a traditional and routine responsibility, although voluntary agencies and free clinics had begun to lend assistance to a class of needy people above the level of abject poverty. Now, however, an economic upheaval of unprecedented magnitude placed in the category of medical needy so many people as to overwhelm the old system.

This situation was regarded as relatively temporary in character. As elsewhere in the nation, the Illinois State Medical Society and its component units in cooperation with the Illinois Emergency Relief Commission, undertook to meet the problem on an emergency basis.

The system of medical relief devised under these circumstances operated satisfactorily in general, but it was regarded as temporary. It was financed from State and Federal funds so that relative uniformity throughout the State was possible.

Believing that the end of the emergency was approaching, State and Federal funds for medical relief were largely withdrawn and the responsibility was placed by legislation first on counties and later on townships.

The relief load has continued excessively great, however, and much dissatisfaction and unrest concerning medical service to the needy has been expressed by both the public and the profession.

To discover how medical relief was administered after the withdrawal of State and Federal funds, a committee of the Illinois State Medical Society made a survey of the practices in all counties. An utter lack of uniformity was found. With but rare exceptions there was found to be no well-defined policy or practice on the part of the medical profession or the constituted authorities. More than one-third of the counties had adopted no plan of any kind. In twenty counties an agreement between the Medical Society and the Board of Supervisors had been reached, but in many of these the plan worked with indifferent success. Each of fifteen counties maintained a contract doctor, which violates the fundamental principle of medical ethics of permitting the free choice by the patient.

More recently it has become clear and unmistakable that medical relief can no longer be regarded as an emergency matter. Under the new social order and the philosophy of government a considerable proportion of the people in Illinois and in the nation will be permanently in the category of the medical needy. The majority of these will be able to pay something but not enough to remunerate physicians and hospitals on the basis of established rates. Numerous plans have been suggested and some have been adopted here and there throughout the country to meet this problem.

Recently an investigation in Capital Township in Sangamon County revealed excessive expenditures in proportion to the relief load, according to the reports. Here the contract plan was in vogue. The Relief Administrator is now seeking the cooperation of the Sangamon County Medical Society in adopting a plan for correcting the situation. The contract physician is to be dropped; clients will have the privilege of selecting

their own physician, and a new method of accounting will be adopted.

Recognizing the unrest and lack of systematic practice concerning the medical care for the needy and anticipating not only the need for action but also the developments which are now materializing, the Council of the Illinois State Medical Society recently appointed a committee to make a detailed study of the situation in Illinois. At the conclusion of this study, which will require at least a year, the committee will be in position to recommend a plan based upon conditions which actually prevail in Illinois.

The committee has visited some areas in the southern part of Illinois. It has been to Wichita, Kansas, to study a plan in operation there. Observation indicates that much study will be required to arrive at conclusions that may be incorporated in a practical plan of extending medical care to the needy on a permanent basis.

Medical care is very appropriately a matter of deep concern to the people generally as well as to the medical and allied professions. Cost, quality and availability of medical care are the three factors responsible largely for the widespread agitation which has surrounded this subject in recent years in the United States. Much has been said and a great deal attempted in the way of reform on painfully meager evidence of prevailing needs and practice. Divergent and hotly debated conclusions have been drawn from studies which embraced small samples of the general population or isolated experiences.

This situation has led the American Medical Association to undertake a comprehensive study of the whole subject on a national scale. Instead of covering a few alleged representative doctors and institutions, an attempt will be made to get a report from every practicing physician and dentist in the United States and from every hospital, clinic, public health department and other agencies engaged to any degree in providing medical service to the people. A fund of reliable information never before equaled will thus be brought together and made available for planning intelligently to meet in the best practicable way the problem of supplying medical care as adequately as possible to all the people.

Theories and utopianism will have no place in the study nor in the conclusions drawn therefrom. Only facts which will be helpful in facing reality in a rational way are desired. The end in view is to determine (1) the need for medical care, (2) the extent to which this need is being met, (3) the reasons why medical services are not more extensively employed in meeting obvious needs, (4) the volume of existing machinery for providing medical care and (5) the best method of extending medical care in a way that will meet as satisfactorily as possible all requirements.

Wholehearted cooperation of all State and county medical societies and of all individual physicians is imperative to the success of this ambitious and laudable project. State societies will be asked to study all governmental and voluntary institutions and agencies that operate on a State-wide scale and to promote the cooperation of county societies. The county societies, in turn, will be asked to get reports from each practicing physician and dentist and to cover all local institutions and agencies. Special forms have been printed for reports concerning medical services rendered by (1) individual physicians and dentists, (2) hospitals, (3) nursing agencies, (4) health departments, (5) other governmental and private organizations, (6) public and private schools, (7) colleges and universities and (8) all groups such as fraternal, mutual benefit, industrial and medical agencies which function in this way. These printed forms will be distributed through State and County Medical Societies, each of which have been or will be asked to appoint committees and effect an organization to conduct the survey.

This work will entail considerable effort and some expense on the part of county medical societies. It will require the careful attention and assistance of every physician and dentist. The project is the answer of organized medicine to criticisms and to agitation for reform. Its success will be a measure of the interest and attitude of the physicians of America concerning the matter of medical care in all of its ramifications.

Costs are not considered in the survey. It deals rather with the need and the demand for medical care and the available supply of medical services and facilities. Facts on these points will lead to satisfactory ways and means of providing service commensurate with the demand if not with the needs. Some people, how large a proportion no one knows, decline to accept medical services even when they recognize the need and are well able to pay the bills. This is true of those who believe in absent treatment and various other cults. It is true likewise with respect to many other people. Ingraham of New Jersey, for example, showed on the basis of experience in that State that only one-third of syphilitic patients can be held for treatment until released without invoking or threatening to invoke the law and that even then only 70 per cent. can be held. If this is true of patients with syphilis it would be true likewise of those suffering from cancer, diabetes, rheumatism and chronic ailments generally.

Adequate medical treatment, therefore, as envisioned by idealists who would save those who decline to save themselves would involve a great deal of coercion if attempted beyond the point of demand. Coercive measures may be desirable and in some States are legalized with respect to some communicable diseases in the infectious stages. Otherwise there are no legal grounds for compelling people to accept medical care, even when the need appears obvious. It may be, therefore, that an extension of educational work is more pressing at the moment than an extension or radical reform of the system of medical care.

To get factual data on the prevailing need as well as the demand for medical care, the survey will ask physicians, dentists and hospitals to show accurately how many non-paying patients were cared for during 1937. This will include those to whom services were voluntarily given free and those who failed for any reason to pay their bills or any part of the cost. Physi-

cians and dentists will be asked also to report any and all specific instances in which a person who so desired was for any reason unable to obtain medical, dental or hospital service. Each doctor will be asked to show also how much time he spent in providing services of a preventive character, whether in his office or in connection with organized effort at some other place, such as a baby clinic or summer roundup.

Similar information will be sought from all organized agencies. An inventory of the capacity of hospitals, sanatoria and clinics and of the extent of services provided by health departments and other agencies will be taken.

The vocal demand for extending medical care through compulsory insurance schemes and in other ways may be regarded as the expression of a patient who at least thinks himself to be very sick. He has arrived at a self-made diagnosis and is clamoring for treatment of his own prescribing. He has compared his symptoms with those seen in advertisements and has decided upon a remedy held out to be a panacea.

The proposed study by the American Medical Association is an expression of the highest ideals of medical practice. The detailed survey will bring together all of the essential information bearing upon the symptoms of the patient. It will amount to a careful history taking and a painstaking examination of the physical and mental conditions. Taking nothing for granted and jumping at no conclusions, the result will be an accurate diagnosis and a reliable, rational and effective prescription calculated to bring maximum benefits to the patient.

The success of the survey will place the American Medical Association and each of its component units in a commanding position of leadership in the medical field. It will make possible the projection of medical services along lines of unsurpassed excellence with respect to the patient, the public and profession. It will lead to a practical plan for such readjustment and reform as may be necessary to place at the disposal of the American people a system of medical practice superior in quality and more readily available to all who need it than has ever before been developed anywhere.

The project warrants the unqualified support and cooperation of every physician throughout the nation.

Respectfully submitted,

John R. Neal, M. D., Chm.,
R. K. Packard, M. D.,
H. M. Camp, M. D.,
Special Committee on Indigent Medical Care.

REPORT OF MATERNAL WELFARE COMMITTEE

To the Members of the House of Delegates:

On presenting the first annual report of the Committee on Maternal Welfare of the Illinois State Medical Society, it seems advisable to briefly tell of the organization of this Committee, its meetings, and then refer to the proposed plan of future procedure.

When the Social Security Act became a law on August 14, 1935, there were three sections referable to health, namely: Aid to Crippled Children, Aid for Maternal and Infant Welfare, and the Syphilis Control Program. Grants were to be made for these health activities to the various states upon a matching basis, the state to furnish a similar amount, except in the Syphilis Program.

Although no reference was made in the Social Security Act to cooperation on the part of our Medical Societies, it was quite evident that these health activities would be under way within a short time, regardless of the attitude of the medical profession. In Illinois, the Governor appointed a Maternal Welfare Committee with Dr. F. H. Falls, Professor of Obstetrics at the University of Illinois College of Medicine, as the Chairman. The State Director of Public Health, the Chief of the State Department Bureau of Child Welfare and Public Health Nursing, and the Chairman of the Educational Committee of the Illinois State Medical Society were members of the Governor's Committee.

The State Committee met with the Educational Committee of the State Society on several occasions, and it was deemed advisable to ask the State Medical Society to cooperate in carrying out the provisions for maternal and child welfare, and one year ago, Dr. Falls, as Chairman, met with the Council and solicited the cooperation of the State Medical Society. Refresher courses in Obstetrics and Pediatrics were arranged to be presented before many county medical societies, at no expense to them, and under the supervision of the Educational Committee.

Dr. Harold H. Hill on the Obstetrical Staff at the University of Illinois was selected to act as Field Consultant for the Maternal Welfare Committee, and under the direct supervision of the State Department of Public Health. Dr. Hill contacted many county medical societies and made preliminary arrangements for the development of the refresher courses. Many county societies cooperated in the conducting of these courses, and the physicians responded by giving a good attendance at most of the meetings.

During the summer of 1937 intensive post-graduate courses in Obstetrics and Pediatrics were conducted at the University of Illinois College of Medicine and many physicians from various parts of the State attended them. After this program had been developed to give these services, Dr. Falls and his committee recommended to the Council that the State Medical Society develop a committee on Maternal Welfare with one member from each of the 11 Councilor Districts.

The following Committee was selected by the various Councilors to constitute the Committee on Maternal Welfare of the Illinois State Medical Society:

District	*Committee Member*	*Councilor*
1st Dist.	Dr. E. H. Quandt, Rockford	Weld
2nd Dist.	Dr. Jos. T. O'Neill, Ottawa	Cook
3rd Dist.	Cook County	
4th Dist.	Dr. Phebe Pearsall, Moline	Coleman
5th Dist.	Dr. R. R. Loar, Bloomington	Peairs
6th Dist.	Dr. Milton E. Bitter, Quincy	Knox
7th Dist.	Dr. Walter D. Murfin, Decatur	Neece
8th Dist.	Dr. O. H. Crist, Danville	Wilkinson

9th Dist. Dr. T. B. Williamson, Mt. Vernon Hall
10th Dist. Dr. Henry G. Horstman, Murphysboro Templeton
11th Dist. Dr. John F. Carey, Joliet Hamilton

Dr. Harold M. Camp, Secretary of the Illinois State Medical Society, called the above named physicians together in Chicago in November, 1937, to perfect an organization. Dr. T. B. Williamson of Mt. Vernon was elected chairman, and Dr. John F. Carey of Joliet was elected secretary of the Committee. It was agreed by the Committee that they should meet quarterly, and that the committee should have a state-wide organization, consisting of one assistant committeeman in each Councilor District, and a county chairman in every county in the state with the exception of Cook. The county chairman must be a member of organized medicine, and selected, or approved, by his local medical society in the county in which he resides. The county chairman shall be in charge of all the activities of his county, including a speakers' bureau of physicians to be available at all times for talks to lay groups on prenatal care.

The State Committee has four major objectives, namely: First, we endorse the refresher courses in Obstetrics as conducted by the county medical societies of the state, and urge their continuation. Second, we recommend an educational campaign before the laity on prenatal care, to be conducted in each county of the state by the County Chairman and his committee. Third, we recommended that the members of organized medicine of the State of Illinois sponsor the health problems incorporated in the Social Security Law, in preference to seeing them carried out by the social workers. Fourth, we heartily approve of the summer post-graduate courses offered by the University of Illinois College of Medicine, and recommend that every physician practicing in the state, take advantage of this fine opportunity to improve his technique in obstetrics.

At the second meeting of the Committee, a definite program was presented by the Chairman for the use of the County Chairmen. After much discussion it was finally agreed that the program be adopted in full, and that a copy of it be sent to all the County Chairmen of the state, as a guidance in their activities in their educational campaign on Maternal Welfare. The Committee advises that every physician of organized medicine in the State of Illinois be supplied with one of these programs, so that he will know what the State Committee intends to do in this educational campaign to reduce the morbidity and mortality of mothers and babies.

The Committee further agreed that a district meeting should be held in each district in the state, to acquaint the County Chairmen and physicians of each district with the Maternal Welfare Program.

The meetings have all been well attended, and a fine response on the part of the physicians throughout the state has been manifested. The Committee believes that the program which has been approved should be carried on over a period of not less than five years. The longer the work is continued the better will be the reaction, and the end results, as shown by the maternal and infant statistics, will in all probability warrant this opinion.

The Committee further agreed that there should be one public meeting held each year in every county of the state, to give the County Chairmen and their committee the opportunity of bringing this educational campaign before the women's organizations of their counties.

Dr. Harold H. Hill, Field Consultant in Maternal Welfare and Child Hygiene, suggested to the Committee that more time should be given to the obstetrical program at the State Medical meetings. After a free discussion of the subject it was approved by the Committee, and the Chairman appointed a committee consisting of Doctors Carey, Bitter, and Crist, to confer with the Chairmen of the Obstetrical and Gynecological groups relative to more time at the State convention, and the State Committee desires to recommend to the Council, for their serious consideration, that at least one full day be allotted to a program on Obstetrics, and we beg to recommend, if our prayer be granted, that it be held on the first day of the State Meeting each year.

During recent years there have been many articles appearing in lay publications such as the *Ladies Home Journal* telling the horrible death rate among mothers and infants, that there are nearly twenty countries where it is safer for a woman to become a mother than in the United States—why doesn't the medical profession do something about it—etc. Many of our people naturally believe the American physicians less competent than those in many other countries, while all the time the actual truth is not divulged.

In this country deaths occurring during the puerperal state are invariably classed as "maternal deaths," including criminal abortions, deaths from intercurrent infections during pregnancy, and those unfortunate cases where a woman with a heart barely compensated under normal conditions, marries, becomes pregnant, then decompensation follows. In many countries the actual cause of death in cases of this character are properly reported as "criminal abortions," "pneumonia," "tuberculosis," "cardiac disease," etc., which makes a material difference in the statistics. We are informed that in some European countries, death reports are held secretly, and do not become public property, so the physicians do not hesitate to report them in their true form.

It is true that the mortality and morbidity statistics in Illinois among mothers and infants is quite high in a few counties, and these high local rates naturally increase the average for the entire state. From reports and investigations which have been made in these counties, it is quite obvious that but little fault lies at the door of the medical attendants, and the major portion lies in the ignorance, indigency and indifference of the people.

The Committee plans to cooperate thoroughly with the county medical societies of this state and their individual physicians. We firmly believe that with the proper type of cooperation continually, a definite result will be seen within a relatively short time in the maternal and infant statistics. The Council has thor-

oughly approved the actions taken by the Committee, and we have acted entirely upon the orders received from this executive group.

The program adopted by the Committee should be read by every physician in Illinois and we are desirous of incorporating it in this report. It is quite probable that additions or other changes will be made from time to time, but it will be with the approval of the Council of this Society, or the House of Delegates. We all realize that the Social Security Act is the law of this nation, and it is going to be enforced whether we approve it or not, and it is surely a better plan for our State Medical Society to take the initiative in carrying out those sections of the Act pertaining to health which are mandatory, than it would be to refuse to have anything to do with it, and see the plans developed in a way which would be more objectionable to physicians, and which unquestionably would not gain the desired objectives.

The program planned is:

1. More emphasis should be placed on adequate prenatal care:
 a. Monthly visits up to the seventh month then every two weeks—history—physical examination including pelvic measurements—urinalysis—blood pressure—Kahn—blood count including red, white and hemoglobin—weight and dietary instructions.
2. Greater attention should be given to eugenics rather than to birth control.
3. Every county medical society should include in its postgraduate instructions for doctors "refresher" courses in obstetrics.
4. The study of maternal, fetal and early infant deaths should be continued to determine preventability, with a committee meeting regularly.
5. A physicians' speakers' service should be organized for lay groups in each county.
6. In each county of the state, a large public meeting should be held to bring to the attention of everyone the need for saving the lives of mothers and babies.
7. Greater emphasis should be placed on the value of a routine Wassermann test for syphilis for every prospective mother immediately after a diagnosis of pregnancy is made.
8. The interest of women should be secured, particularly such groups as the Woman's Auxiliary of the county medical society.

The Committee on Maternal Welfare of the Illinois State Medical Society will continue to function according to the desires and wishes of the Society as long as the Society believes it is advisable, and we desire to assure the members of this House of Delegates that we are always anxious to receive suggestions or criticisms of a constructive nature which may improve the services we are doing.

We hope at the next annual meeting of the House of Delegates, to report more progress and that we will have at least been able to show that cooperation with our Government, State Department of Public Health, and the Civic Agencies, has been to the best advantage of organized medicine, and to the citizens of the State of Illinois.

Respectfully submitted,
T. B. Williamson, M. D., Chm.
Committee on Maternal Welfare.

REPORT OF VETERANS' SERVICE COMMITTEE

To the Members of the House of Delegates:

The Veterans' Service Committee is pleased to report a year of progress. Because of the disturbed conditions over the entire world and the feverish preparations for war, your committee's attention might be turned toward the subject of Military Preparations as it affects the Medical Professions.

A joint meeting of the Medical Commission of the American Legion and the Medical Post was held in Chicago, at which time legislation from a military and medical standpoint was discussed. During the last year legislative affairs have been rather favorable. There were many bills introduced in Congress proposing to construct additional hospital or domiciliary facilities for veterans. There were thirty-one bills introduced from twenty-four states, none of which passed. However, a gift of land from Henry Ford was accepted, on which a hospital is to be erected at some time.

There are certain other legislative problems of a military nature not ripe for discussion at this time which are receiving your committee's very close attention and will be reported at the next Council meeting.

Respectfully submitted,
F. O. Fredrickson, M. D., Chm.,
J. M. Hayes, M. D.,
John S. Nagel, M. D.,
F. G. Norbury, M. D.,
T. B. Williamson, M. D.,
W. C. Burkett, M. D.
Veterans Service Committee.

REPORT OF CANCER COMMITTEE

To the Members of the House of Delegates:

I have the honor to submit the report of the activities of the Committee on Cancer since our last annual report.

1. The report of the survey of cancer facilities in the State of Illinois which was made for your Society by the American Society for the Control of Concer at the suggestion of this Committee has been studied, and a number of the recommendations made in this report have been put into effect. The completed report has been placed in the hands of all of the Councilors of the Society, with the request that they put into effect in their Councilor Districts such of the recommendations appended to this report as are feasible in their respective Districts. In the course of time it will be possible for your Society to make effective some of the other recommendations made in that report, and, at the opportune times your Committee on Cancer will draw your attention to the possibilities for action. After thorough study of this report your Committee feels

that it has great value, and that it was justified in the request made of your Society which brought about the making of that survey.

2. Individual members of your Committee on Cancer have appeared on cancer programs before a number of County Societies and before a large number of lay audiences, thus serving in the cancer educational field for both the profession and the laity.

3. Work which was begun on the preparation of a brochure on the methods of diagnosis and treatment of cancer for the guidance of the profession of the State has been at least temporarily discontinued, as it has been learned that another publication with the same ends will in all probability soon be made available from other sources. If this turns out to be true, your Committee will review that publication and then make appropriate recommendations as to action concerning it to the Council of your Society.

4. At the request of the Committee on Scientific Exhibits, which is preparing a Hall of Health for public education in medical matters at Springfield the week of May 16, a booth on cancer is being prepared by your Committee on Cancer. The Council has appropriated to the Committee the sum of two hundred dollars for help in the preparation of this exhibit.

5. Your Committee on Cancer, with the addition of Dr. A. C. Baxter, Acting Director of the Department of Public Health in Illinois, and Mr. Harry A. Brinkman, Vice President, Harris Trust and Savings Bank, Chicago, has acted as the Executive Committee of the Illinois Women's Field Army against Cancer. The State Commander for this year, who was selected by this Committee, is Mrs. George Hanly Nippert of Chicago. The Executive Committee has had numerous meetings with Mrs. Nippert and Dr. Frank L. Rector, Midwestern Representative of the American Society for the Control of Cancer, and all activities of the Women's Field Army in this State have been guided by your Committee. The Chairman of your Committee has appeared before the Council of the Illinois State Medical Society on numerous occasions and has presented progress reports to them, has secured their local cooperation in furthering the organization of the Women's Field Army and in fulfilling its purposes. The cooperation which has been extended by the Councilors, which in some cases has been very extensive, is heartily appreciated. The State Department of Public Health has been of invaluable assistance through the publication and distribution of twenty-five thousand pamphlets on cancer which were prepared by Dr. Rector. The Department has also made available some moneys from the Social Security Fund for the projection of the organization of the Women's Field Army. At the time of the writing of this report, April 20, sixty-two counties out of the one hundred two counties in the State are completely organized for the purposes of the Women's Field Army. A campaign of enlistment is being held from April 17 to April 30. The Governor of the State and the Mayor of Chicago have proclaimed April as Cancer Control Month. It is too early to report on the success of the enlistment campaign but the prospects are good. May I recall to your minds that of the funds collected in Illinois seventy per cent. is at the disposition of the Executive Committee of the Illinois Women's Field Army for educational campaign in the State of Illinois, twenty per cent. is used by the American Society for the Control of Cancer in supervising the nation-wide campaign and Illinois benefits directly from that expenditure, and ten per cent. is held in reserve by the American Society for the Control of Cancer as a fund for emergencies. The Chairman of your Committee expresses his gratitude to the members of the Committee who have cooperated so heartily, and to the Council of the Society which has made possible the work of the Committee.

The personnel of the Committee on Cancer is as follows: Dr. J. P. Simonds, Chicago; Dr. Don Deal, Springfield; Dr. Roswell T. Pettit, Ottawa; Dr. Gatewood, Chcago; Dr. Bowman C. Crowell, Chcago.

Respectfully submtted,

Bowman C. Crowell, M. D., Chm.,
Committee on Cancer.

REPORT OF SCIENTIFIC EXHIBITS COMMITTEE

To the Members of the House of Delegates

The exhbits in the Scientific Exhibit and the Hall of Health speak for themselves.

There is one suggestion that I should like to make. I feel that the Hall of Health should come under the Educational Committee rather than under the Scientific Exhibits Committee. The work in connection with the Hall of Health can be done by the Scientific Exhibits Committee, but this undertaking is lay educational and could, I believe, be better handled by those directing all other such work of the Society.

J. S. Templeton, M. D., Chm.,
N. S. Davis, III, M. D., Secy.,
J. P. Simonds, M. D.,
C. F. Harmon, M. D.,
E. H. Weld, M. D.,
A. W. Meyer, M. D.,
Harold J. Noyes, M. D.,
Committee on Scientific Exhibits.

REPORT OF COMMITTEE ON PHYSICAL THERAPY

To the Members of the House of Delegates:

I beg to report that after a questionnaire sent to practically all the medical schools to which students from Illinois attend, we find that they give no uniform course of instruction in physical therapy.

Some schools give no course at all, some but very little, and some quite extensive. In some schools it is optional, and some it is compulsory.

I have met with some members of the committee and other physicians who are intensely interested in physical therapy, and it is our opinion that there is a great lack of knowledge among the ordinary physicians concerning the good that can be derived from physical therapy measures when scientifically applied.

It is also our opinion that much valuable information

could be disseminated if the medical societies would occasionally have some physician appear on their program who is qualified to discuss physical therapy measures.

High powered salesmen have induced many physicians to spend hundreds and thousands of dollars upon apparatus that is practically useless in curing or relieving human ailments. If it were possible to secure men qualified to lecture on physical therapy each county society should have a program of this kind at least once a year, but so far as we can learn, very few men are qualified to give a worthwhile lecture on physical therapy.

Respectfully submitted,

Andy Hall, M. D., Chm.,
Bernard Fantus, M. D.,
D. H. Levinthal, M. D.,
Hugh E. Cooper, M. D.,
Rudolph Mroz, M. D.,
F. Flinn, M. D.,
Committee on Physical Therapy.

REPORT OF FIFTY YEAR CLUB COMMITTEE

Sometime ago, the Council of the Illinois State Medical Society, realizing that there are quite a number of physicians in the State who have been practicing medicine for fifty years or more, who have rendered good service to the public and brought honor to the profession, conceived the idea of organizing these physicians into a Fifty Year Club. A committee was appointed to formulate rules governing the eligibility of these Fifty Year Men and to select a suitable emblem to be presented to each of them. Your committee recommended that any physician, whether now a member of the society or not, who has been engaged in the practice of medicine for fifty years or more and is recommended by his county medical society, should be eligible to become a member of the Fifty Year Club.

The committee also selected a lapel button to have inscribed upon it, Illinois State Medical Society—Fifty Year Club. The committee also recommended that where possible a special meeting be held at which time a certificate signed by the President and Secretary of the State Society and the Chairman of the Council should be presented to these men with the lapel button. It was also decided that these certificates should be suitably framed.

So far 119 down state physicians have been found to be eligible and 77 physicians in Cook County.

From all reports these special meetings have been well attended and the presentation ceremony and the responses have been most interesting.

Your committee recommends that a record be kept of these fifty year men and that where possible some of the high lights in their experience be recorded and filed away with the other historical data in the archives of the Illinois State Medical Society.

Respectfully submitted,

Andy Hall, M. D., Chm.,
J. S. Templeton, M. D.,
T. B. Knox, M. D.
Fifty Year Club Committee.

Dr. Hall: I want to call the attention of these delegates to the fact that so far we found 119 downstate physicians who are eligible for the Fifty Year Club and only 77 physicians in Cook County. I am wondering why, whether the physicians downstate live longer than in Cook County, or whether we have better physicians downstate, or whether the physicians in Cook County hesitate to give their ages.

COMMITTEE ON INTERPROFESSIONAL RELATIONS

(This report is included in the report of Charles S. Skaggs, Councilor-at-Large, page 24.)

REPORT OF SYPHILIS CONTROL COMMITTEE

To the Members of the House of Delegates:

No regular meeting of the Advisory Committee on Syphilis Control has been held this year, but most of the members have taken an active interest in a special way, by cooperating with the State Department of Public Health in launching the Publicity Program; discussing the subject of Venereal Disease, especially Syphilis, in all its phases before Medica Societies, lay groups, including Luncheon Clubs, Parent-Teachers Associations, City Teachers Institute, W. P. A. workers and industrial organizations.

Dr. A. C. Baxter, Assistant and Acting Director of the Department of Public Health has discharged the Laboratory Advisory Committee, whose function was to suggest recommendations for the establishment of a system of laboratory approvel. The Director felt that an Advisory Board should be established to launch a statewide system of approval of all laboratories which perform tests of Public Health significance. The personnel of this Board is as follows:

Dr. Lloyd Arnold, Professor of Bacteriology and Public Health, University of Illinois College of Medicine.

Dr. A. A. Day, Professor of Bacteriology, Northwestern University.

Dr. Lewis Hill, Clinical Pathologist, Associate Professor of Bacteriology and Preventive Medicine, Loyola University School of Medicine.

Dr. I. H. Neece, Councilor, Illinois State Medical Society.

Dr. J. L. White, Chief, Bureau of Laboratories, Chicago Board of Health.

The State Department of Public Health is desirous of improving the general quality of Public Health Laboratory work throughout the State of Illinois. To further this objective in the private and hospital diagnostic laboratories, the Board has decided to develop a plan of registration and approval of all labortories that meet and maintain the required standards. Participation, however, will be entirely voluntary. Any laboratory which shows a desire, may register with the

State Department of Public Health. To do this, it will be necessary to fill in an application form which calls for information concerning the location, personnel, equipment, etc., of the laboratory and whether or not inspection for approval is desired. At first, approval will relate only to tests concerning Venereal Disease. Later, as rapidly as facilities permit, it is the plan to extend the system to include all procedures of Pubic Health significance.

Each cooperating laboratory will be inspected from time to time by a well qualified laboratory expert, when efficiency of test specimens will be appraised in other ways. Standard antigen for use in connection with blood tests for syphilis will be provided without local cost. The Department will endeavor to render every practical assistance to cooperating laboratories in doing the highest standard of work.

The great demand for blood tests for syphilis created by the aroused public interest in that disease, and the law which requires pre-marital examinations makes imperative a high standard of diagnostic laboratory service, in order to prevent inaccurate results of serious implications. It is believed that considerable variation prevails with respect to procedures employed in various laboratories for testing blood for syphilis. The danger of inaccurate results will be minimized in all laboratories that cooperate with the State Department of Public Health in the plan for standardizing tests. The Certificate of Approval will testify that a laboratory is equipped to render accurate diagnostic service with respect to venereal disease.

Respectfully submitted,
I. H. Neece, M. D., Chm.,
H. M. Camp, M. D.,
Andy Hall, M. D.
Lloyd Arnold, M. D.,
J. J. McShane, M. D.,
H. J. Shaughnessy, Ph. D.,
Committee on Syphilis Control.

REPORT OF ETHICAL RELATIONS COMMITTEE

To the Members of the House of Delegates:

A question of discipline arose recently in one of the County Societies which suggest that more definite consideration should be given to the principles which govern such procedures.

The law entitles every man to a fair trial by an unprejudiced body before he can be disciplined, and if the alleged delinquent agrees to trial according to the rules and regulations of an organization there must be a well defined clause in the Constitution and By-Laws which covers the character of the offense and acquaints the man charged with violation thereof, with adequate knowledge of his supposed misdemeanor and gives him ample time to prepare his defense, otherwise a decision against him will not be sustained in a court of law.

Furthermore it is unfair and un-American for any person or any organization to act as prosecutor, jury, and judge in a case of alleged malfeasance no matter what precedents may be set before us in Washington.

It is therefore important that each constituent body of the Illinois State Medical Society should have in its Constitution and By-Laws a form of procedure which follows closely the Code of Ethics laid down by the A. M. A., and submitted to the State Society for approval before adoption, or for any amendment thereto, in order that no conflicts may arise throughout the State jurisdiction.

Such Code should require the choice of a Committee of Inquiry; a fact-finding committee, or committee on Professional Conduct to consider the charges made. The reports of its investigations, if confirming the charges, should be referred by the Society as formal charges to an Ethical Relations Committee which shall sit in judgment on the case and refer its decision back to the constitutent Society for final action.

Penalties also should be provided in four degrees of severity, such as, 1. Admonishment; 2. Censure; 3. Suspension; 4. Expulsion. One or more of which may be appropriately imposed.

Any effort to apply discipline should be conducted in exact accordance with these by-laws and *not* by resolution. Moreover on every such occasion a comprehensive record of the proceedings must be kept for reference in case of appeal to the State Society Council, or for justification if the defendant should ask for intervention or relief by a court of law.

In view of these principles it is proposed that the Illinois State Medical Society in its Constitution and By-Laws, or elsewhere as a matter of information, should provide a formula for such procedure, under a special section entitled, "Discipline."

In order that the method of discipline can follow a certain regular form throughout the state the appended summary of procedure is suggested as a workable form for consideration by the Council, and for study by the County Societies. If adopted it should be incorporated in the By-Laws before or after the last section on amendments.

PROCEDURE TO BE FOLLOWED IN CITING A MEMBER TO TRIAL

Is Presented in the Following Report of The Ethical Relations Committee of the Illinois State Medical Society for Presentation to the House of Delegates.

I. Most complaints when received could be referred to the Committee on Professional Conduct without any action on the part of the Council or the Society; and your committee recommends that the Secretary of the Society be authorized and instructed to use his discretion as to such reference; the Secretary to be further directed to report all such complaints to the Council whether they are referred to the Professional Conduct Committee, or to the Ethical Relations Committee directly.

II. On conclusion of its investigation of any complaint, no matter how received, the committee has two courses:

(1) It may recommend no action.

(2) It may recommend citation of the respondent.

(a) If charges of ethical violations be preferred, the accusing member, or Committee on Professional Conduct, should sign the complaint, and if in the opinion of the Committee, the testimony warrants, formal charges should be brought, and forwarded to the Council for submission, if necessary, to the Ethical Relations Committee.

The complaint should be reduced to a concise statement by the Committee, and thereafter sworn to by the complainant.

The accusation is made by a member of the Society, and he should sign the complaint (but not the charges).

This forms a sort of indictment and serves two purposes:

(1) It removes the personal element present when A accuses B, substituting therefor an impersonal action by a committee engaged in the performance of its duties.

(2) It changes the nature of the charges from a biased accusation to a calm statement that the ascertained facts are such as warrant their evaluation by the Council of the County Society or by the Council of the State Society.

III. The form of the charges should be as follows:

To the Council of the Illinois State Medical Society (or County Society):
Attention, Dr. ————, Secretary.

We, the Committee on Professional Conduct, (or Ethical Relations) of the Illinois State Medical Society, or County Society, having investigated ————, hereby charge as follows: that ———— (member, or members) of the Illinois State Medical Society has violated————.

Said Section ———— reads as follows:————.

Your committee bases these charges upon the following information disclosed by its investigations heretofore referred to: ————.

That your committee is informed and believes and therefore charges: ————.

Your committee believes that the foregoing acts and conduct on the part of said ———— constitute violations by said ———— of the section of the ———— (here insert By-Laws or Principle of Medical Ethics, as the case may be) which has been previously mentioned herein. Your committee believes that the alleged acts and conduct, if found to be true, of said member of this Society, namely ————, who is herein charged with violations of ————, require disciplinary measures as provided in Chapter VIII, Section 2 of the By-Laws of the Illinois State Medical Society and, therefore, prefers these charges.

Said Chapter VIII, Section 2, reads as follows: "Acts and Conduct Subjecting Member to Censure, Suspension or Expulsion by Component County Society. Any active member of a component county society who has been adjudged guilty of a criminal offense involving moral turpitude, or who has been duly adjudged guilty by his society, in accordance with the procedural requirements of these by-laws, of gross misconduct as a physician or a surgeon or of a violation of any of the provisions of the professional conduct of his society or of the principles of medical ethics promulgated from time to time by this Society or by the American Medical Association, shall be subject to censure, suspension or expulsion from his society by such component county society."

Date: ————.

IV. The details of service, certificate of service, notice of hearing, and such further details as set forth in Chapter VIII, Section 2, of the By-Laws of the Illinois State Medical Society should be meticulously followed.

V. There should be no evasion of the fact that the respondent who is being cited is to be tried; that the Committee, or Council before which he is cited to appear is a trial body; or that he will be on trial when he appears.

VI. The Chairman of the Committee on Ethical Relations should be assigned the definite duty of prosecutor, the other members of the committee sitting as advisers.

VII. The Committee or Council, which is in fact the jury, should refrain from interrogation of the respondent or witnesses except in such instances as some question may be necessary to clarify some doubt existing in the questioner's mind. When there is such a question it should be addressed to the presiding officer.

VIII. The respondent should be advised of his rights, namely: that he may be represented by any member of the Society, as counsel; that he, or his counsel, may cross-examine witnesses; that he may offer in evidence any records or documents that he deems fit; that he may enter objections as to testimony or to material in evidence; that he may address the Council in his own behalf; and that he has the right of appeal.

IX. A Referee may be present in any case.

X. It shall be the policy of the Committee or Council that the Chairman thereof shall remain as its presiding officer, but that all questions of procedure shall be answered by the Chairman of the Ethical Relations Committee who in all cases should be present.

XI. On conclusion of the hearing, the respondent, his counsel, if any, the Ethical Relations Committee, if before the State Council, should be excluded and the verdict considered. The verdict should be ascertained by secret ballot in writing.

A time should be fixed in which briefs may be filed, and the Council should consider the evidence after such time has elapsed.

XII. The Secretary of the Society shall advise the accused in writing of said accused's rights under Chapter VIII, Section 2, of the By-Laws of the Illinois State Medical Society on a form on which shall be printed all of Chapter VIII, Section 2 of the By-Laws.

XIII. To avoid expressions of opinion, verdicts should be rendered as follows:

"Resolved, that the charges against (name) be and hereby are dismissed" in case that the respondent is found not guilty; or, "Whereas, (name), a member of this Society, has been charged with violation of certain sections or articles of the Code of Ethics; and

"Whereas, He has had a fair and impartial trial and has been found guilty:

"Resolved, That he be and hereby is (action taken)."

Respectfully submitted,

Charles B. Reed, M. D., Chm.,
Philip H. Kreuscher, M. D.,
E. S. Hamilton, M. D.,
Charles S. Skaggs, M. D.,
Committee on Ethical Relations.

Dr. Reed: On account of the newness of this procedure in regard to discipline, we have worked very hard to make it fair, reasonable and according to law. In addition, we have consulted with Dr. Hammond of our own Judicial Council and with Dr. George E. Follansbee of the Judicial Council of the American Medical Association, who writes as follows: "I would like to see somewhere in your most excellent set up the statement that evidence not pertaining to the charges as made is incompetent and cannot be considered. Such evidence has required reversal by the Judicial Council in some trials where the accused should have been disciplined. In my opinion the Ethical Relations Committee has recommended a forward step which would meet the approval of the Judicial Council."

All the corrections which Dr. Follansbee has suggested except this particular one, just read, have been very carefully worked out and have been presented in the corrected document which I trust is approved, and if the House of Delegates agrees will be forwarded to the Constitution and By-Laws Committee on Thursday morning. Dr. Follansbee's suggestion regarding the incompetence of certain pieces of evidence is most important and it will be included in the new draft.

The President: This will be referred to Committee C.

REPORT OF CONSTITUTION AND BY-LAWS COMMITTEE

To the Members of the House of Delegates:

1. It seems to this Committee that the By-Laws should be altered first by exchanging procedure No. 15 of the Order of Business on the Second Day for No. 16, the numbers to be transposed. This would eliminate a certain awkwardness at this time and will enable the new President-Elect to adjourn the House of Delegates.

2. If the new section on Disciplinary Action is adopted by the Council in order to harmonize the methods of procedure in such cases throughout the State, if so desired, it is recommended that Chapter 8, Section 3 should read:

"Acts and Conduct Subjecting Member to Censure, Suspension or Expulsion by Component County Society. Any active member of a component county society who has been adjudged guilty of a criminal offense involving moral turpitude, or who has been duly adjudged guilty by his society, in accordance with the procedural requirements of these by-laws, of gross misconduct as a physician or a surgeon or of a violation of any of the provisions of the professional conduct of his society or of the principles of medical ethics promulgated from time to time by this Society or by the American Medical Association, shall be subject to censure, suspension or expulsion from his society by such component county society."

That Section 4, now Section 3, should have inserted after "councilor" in the next to the last line the words, "According to the Procedure for Disciplinary Action." Further, that the succeeding sections should be renumbered to agree.

3. It is also recommended by the Committee on Constitution and By-Laws that the form of Disciplinary Action, if adopted by the House, should be used as a model of procedure by county societies.

Respectfully submitted,

C. B. Reed, M. D., Chm.,
E. H. Weld, M. D.,
R. K. Packard, M. D.,
Committee on Constitution and By-Laws.

Dr. Reed: It is necessary to have this additional matter conform to what we have already put into the constitution and by-laws and make it harmonize, and the Committee on Constitution and By-Laws will be invited to pass upon it.

COMMITTEE ON CORPORATION PRACTICE OF MEDICINE

Dr. Charles E. Humiston: The Committee has no formal report. Some progress has been made. The reason there was not more progress is that no funds were available. Having no money to spend there was no reason for making progress. I would say, however, that the matter is being brought formally and I will say peaceably to the attention of the Attorney General of the State and this Committee is anticipating results.

REPORT OF WOMAN'S AUXILIARY

To the Members of the House of Delegates:

As president of the Woman's Auxiliary to the Illinois State Medical Society, I wish to submit the following report:

1. Ending May 17, 1938, we will have had four Board Meetings. Our first meeting was preceded by a meeting with our Advisory Committee, at which time a program was submitted and approved.

2. Organization and Membership:

a. There are eighteen organized units in the State.

b. Our membership for 1938 is 851 against 783 for 1937.

3. Programs:

a. Our programs have been self education as well as for the layman.

b. Many County Auxiliaries have at least one Laity Day program, while others have more. Adams, Bureau, Kane, McLean, Sangamon, St. Clair, Vermilion, Will-Grundy, all have had one Laity Day, while Cook County has had eight, one in each of their branches.

c. These Laity Day programs include talks on Health Education, Socialized Medicine, Syphilis, Maternal Welfare, Cancer, which proved educational to the public.

4. Public Relations:

a. This may, if you please, be known as the Public Relations Committee to the Medical Society.

b. We have had sent out through the State Health Department all important literature bearing upon Health, and the State Health Bulletin has been sent to every member and many other doctors' wives who are interested.

c. In this connection I am happy to report the State has always cooperated 100 per cent.

d. Our members have been urged and are represented in such clubs as, the Parent-Teachers, Womans Clubs, League of Women Voters, and many other women's organizations. In fact many doctors' wives hold responsible offices in these groups.

5. Hygeia:

a. Cook County again has won the Hygeia contest not only for their county, but for Illinois as well. Our subscription for 1938 is 677 as against 579 for 1937.

b. This official Magazine has been placed in physicians' offices and homes, schools, libraries, girl and boy scout rooms, waiting rooms of various kinds, and in many lay homes.

6. Legislative Activities:

a. Our legislative committee has been kept well informed, and they in turn have passed on this information to each County unit. Thus results have been excellent.

7. Philanthropic:

a. During the past year with the consent of the Council of the Illinois State Medical Society a new project was established known as the "Benevolence Fund." This undoubtedly will add interest to the Auxiliary members, stimulating our membership.

8. This report would and could not be complete without a word of appreciation to the President of the Illinois State Medical Society, for his unbounded and unselfish assistance, to the Secretary for his kind cooperation, the fine spirit of our Advisory Committee at all times, to the Editor of the Illinois Medical Journal, to every doctor who has helped us on our way, and to every committee and chairman. Thank you.

Respectfully submitted,

Helen B. Henkel,
(Mrs. Herbert B. Henkel),
President Woman's Auxiliary to Illinois State Medical Society.

REPORT OF THE EDITOR

To the Members of the House of Delegates:

For the first time in the nearly four decades that the Illinois Medical Journal has been waging the war against the socialization of medicine and for a proper recognition of the just rights of medical economics, the official organ of your Society finds itself walking in the company of its fellows instead of blazing a lone and weary trail.

The principles for which the profession in Illinois has long been crusading through the columns of your official mouthpiece,—The Illinois Medical Journal—are now on the tongues of the profession throughout the country, and flaring forth from the inkpots of every editorial desk. Reinforced by the courageous and thoroughly vigilant stand taken by the American Medical Association during its 1937 convention in Atlantic City the almost single-handed combat Illinois has waged against the menace of state medicine and public health insurance,—those crimes against science and humanity—has now assumed the aspect of a major conflict with some possibility of ultimate victory.

As against this moral victory must be counted the return of the depression, or the recession or the suspension of commercial progress that dropped like a pall over the scene of American business and industry. This severe financial set-back made the upholding of the advertising revenue of the Journal a task that often sank desperately near the levels of discouragement and pessimism. For such ills there is no treatment save that of the counterirritant of increased effort and even more unremitting labors,—a treatment followed painstakingly by the entire editorial personnel. Never in the thirty-nine years of the Journal's existence has there been a more concerted and unified effort in its maintenance. Men of keen foresight and zealous interest in the welfare of the profession and above all of the entire Illinois State Medical Society and its integral units have pursued their aims with even greater ardor. During the last ten years that ardor has been severely taxed but it has withheld the strain of the menacing problems confronting it.

To discuss economic and scientific events impartially and contemporaneously is the motif of the editorial columns of the Journal and its editorial comment is painstakingly estimated from a perspective of justice and honesty. The same care is observed in regard to all editorial contributions for which, in their timeliness and progressiveness and research content, the entire medical profession owes its thanks to the contributors. Naturally there must be an editorial standard and it is good to reflect upon the fact that all contributors have met the editors of the magazine more than half way in the necessary conformation to such standards. It is gratifying to note that men of national reputation from other states and even from other lands are eager to be represented in the pages of the Illinois Medical Journal and the continental demand for the Journal is most flattering.

The battle to save medicine from regimentation is one that must be persistent until salvation is achieved. Socialized medicine is not inevitable but it is an evil that humanity should avoid and it is a pressing duty now for the entire medical profession to rise in its might and in its dignity and fight the good fight that is

the professional habit in the face of any other encroaching pestilence.

To make this fight concerted, unified action is as needed, as unfailingly requisite as upon any other battlefield. One of the keynotes of military organization is first, organization, and second, tactics reinforced by able leadership. The JOURNAL does its best to stir up community interest by printing news and notes of the doings of county medical societies and preaching the gospel, but "faith without works" is dead. Unless the leaders in the county societies take the "message to Garcia" what worth the message itself?

And, once organized, once unified there is but one way to make this organization felt and that is at the polls. This is the weapon that the traitors to Americanism are using to kill the country and all its ideals,—the force of the ballot and the seating in legislative halls of the men who make of our country a bureaucracy instead of a democracy. We doctors must quit despising politics and all its works and take a hand in recognizing politics for what it is, and in running politics rather than being run by the politicians and their politics. Laws are needed and needed sadly to offset the tools with which politics works against science and humanity and among which are listed this nefarious group:

(a) Increasing trend towards paternalism
 1. Federal interference.
 2. State interference.
 3. County and township interference.
 4. Municipal interference.

(b) Increasing trend towards bureaucracy
 1. Installation of portfolio of medical supervision.
 2. Standardization of profession.
 3. Destruction of individualism.

(c) Over-specialization of profession
 1. Increased cost of medical service.
 2. Abolition of "Family doctor."

(d) Centralization of political headquarters of medical control.
 1. Washington, D. C.
 2. Various state capitals.
 3. County seats or other focal points of politics.

(e) Unqualified admissions to license to practice
 1. Christian Science.
 2. Chiropractics, osteopaths and other charlatanisms.
 3. Overtrained and superogative nurses.

(f) Attempted financial segregation
 1. Tendency to moneyed foundations and to despotism in professional mandates.
 2. Exploitation of poor and diseased citizenry through the use of free clinics and allied or analogous sociological measure for the gratification of wealthy but misguided theorists.

There must be demanded, too, through this organized effort, adjustment of relations between ethical, scientific medicine and hospitals, dispensaries, universities practicing medicine, corporations practicing medicine, pay and part pay clinics, medical charities, endowed foundations, social service organizations and similar entities of unscientific, and falsely premised and thoroughly misdirected effort which make of scientific endeavor and ethical practice a political plaything, and a catspaw to pull political chestnuts from the taxpayers' pockets at the expense of the rights of humanity and the rights of medical individuals in diverse and ramified ends of which not the least is the refusal to permit the medical profession to disburse charity at its own expense in its own way, and to have an equitable part in the matter of medical legislation and government, and to inflict by lay decision the inadequacy termed "Federalized Medicine."

The test of life and of ideas is time. Since Time has proven the accuracy of your editor's prophecies of nearly a quarter of a century past this report would lose entirely its *raison d'etre* were the editor to shirk the responsibility of reminding his confreres of the words of Patrick Henry, "I have no lamp by which my feet are guided save the lamp of experience . . . the price of liberty is eternal vigilance . . . give me liberty or give me death."

There can be no better motto for the medical profession nor motif for the profession's magazine than that, and it must be the motto, both of magazine and of men if the ideals of science, and the needs of humanity are to be upheld.

Respectfuly submitted,

Charles J. Whalen, M. D.,
Editor Illinois Medical Journal.

The President: The Secretary tells me there is no unfinished business, so we will pass to the introduction of resolutions.

Dr. Blodgett: I move that the resolutions be read. (Motion seconded by Dr. Blaine and carried).

Dr. Walter Stevenson, Quincy: I wish to introduce the following resolution proposed by the Adams County Medical Society.

1. THE RELATION OF PHYSICIANS AND HOSPITALS

At this time the medical profession is much concerned with the attempts of lay groups, cooperatives, insurance companies, associations, corporations and governmental agencies taking over various phases of the practice of medicine; therefore the Adams County Medical Society petitions the House of Delegates of the Illinois State Medical Society that the following principles be adopted, to prevent similar relations between hospitals and physicians which are not in the best interests of public welfare:

WHEREAS, A. Community hospitals are civic enterprises, having a primary charitable motive, undertaken by philanthropic laymen who assume the financial obligation of providing place, equipment and personnel and by philanthropic physicians who assume the obligation of providing medical care. Such a hospital is a joint enter-

prise to render aid to ill, indigent persons; the lay supporters contributing time and money as such, the medical supporters contributing time and money in the form of professional service.

WHEREAS, B. In order to provide hospitalization for the nonindigent such hospitals customarily maintain accommodations for the care of full-pay patients, as well as for the care of partial-pay patients, who pay for this service according to their ability.

WHEREAS, C. In any of these types of hospitalization, however, the hospital as a corporation provides room, board, nursing and material, beyond which it has nothing to dispose of; at this point the medical staff enters the equation as the essential element to make the service of the hospital whole and effective.

WHEREAS, D. The Staff physicians' services are essential to the charitable purpose of the hospital and the acceptance of his appointment has a certain contract implication, viz., to perform gratuitously the professional service to make effective the hospitalization afforded gratuitously by the institution. A correlative implication of the contract should be that if the institution is recompensed for its service to the patient, the physician should be entitled to recompense in the same proportion, for if the hospital owes it to the supporting public to make the load of charity as light as possible, it owes the same duty to its supporting staff. Otherwise the effect is that the lay supporters of the hospital are relieved of part of their burden, whereas the medical supporters bear the entire burden of their contribution.

WHEREAS, E. This contribution to the hospital enterprise is not offset by any advantage offered by the hospital connection to the staff physician. . . . If it be said that the hospital lends prestige to the staff, it is much more true that the prestige of the hospital depends upon that of its staff.

WHEREAS, F. Hospitals should realize that the profession, through its central organization, the American Medical Association, has evolved certain "principles of medical ethics," outlining the duties of physicians to each other, to the profession at large and to the general public; that this code is the evolution of hundreds of years' experience being based on principles that are primarily for the good of the public in order that the profession can serve it most effectively. Since the profession is bound by these principles, hospital boards should study them carefully in order to better realize the physicians' view point. (While hospitals have no general code of ethics, those prescribed for physicians have generally been interpreted as applying to hospitals. The connections between medical ethics and hospitals is also recognized in codes of ethics for state hospital associations and in the code of ethics for hospitals' publicity of the American Hospital Association.) This should enable hospitals to correlate their service more adequately to cooperate with the profession to render better service to the public. One section of the "principles of medical ethics" with which many hospital boards are apparently unacquainted states (Article 6, Section 4):

"It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the profession of medicine and the welfare of the people, and is against sound public policy."

WHEREAS, G. Hospitals being corporations, their management and policies are the proper prerogatives of their boards of directors. The organization of such boards commonly has overlooked the fact that there are two necessary factors—the services of laymen, as well as the services of physicians, to make the institution effective and the medical staff has usually not been represented. Failure to have the medical staff represented on the board of directors of hospitals has occasioned two undesirable results: (1) The appearance of policies prejudicial to the medical profession, because the influence and information obtainable from medical members has not been available; and (2) the development of the idea that the staff members are servants of the institution rather than essential partners.

WHEREAS, H. It follows that the medical profession to serve hospitals most efficiently for the best welfare of sick people should have proper representation on hospital boards and that hos-

pitals should recognize the profession as partners rather than servants of the institution. (It is suggested that not less than two members of the hospital staff, preferably chosen by the staff itself, serve on the hospital board.)

In view of the above stated principles the following recommendations are made:

Be it resolved, 1. That no hospital shall be permitted to engage in any form of contract practice with an individual, or group of individuals, for any purpose other than the use of its physical facilities, materials and non-medical services such as room and board, use of the operating and delivery rooms, drugs and medicines, surgical dressings, appliances and general nursing, etc.

2. That no hospital shall offer, for a price, any medical service.

3. That in no case may a hospital charge a patient for other than the use of its physical facilities, materials and non-medical services.

4. That emergency and accident patients may have first aid only, administered at the hospital, and the physician selected by the patient must be immediately notified. In no case shall a patient, able to pay, be admitted to the service of a staff member without the request of the patient's own physician, if there be one.

5. That patients who are covered by compensation, health or accident insurance, cannot be considered as indigent.

6. That none but strictly indigent patients shall be admitted to dispensaries.

7. That no patient, except in emergency, shall be admitted to a dispensary without a letter from a physician, local priest or pastor, welfare worker or other reputable citizen, to be followed by adequate investigation by the social worker of the hospital, who shall be able to certify that the patient is known to be indigent.

8. That patients who have been discharged shall not later be re-admitted to a dispensary, without certification that their present economic condition is the same as on their previous admission, and

Be it further resolved, 9. That, as a condition upon which members of the Illinois State Medical Society may continue to serve on the staff of a hospital or dispensary, the institution shall be approved annually by the local county medical society with regard to its fair practices.

Dr. N. S. Davis III, Chicago: I wish to introduce the following resolution:

2. CHICAGO MEDICAL SCHOOL

WHEREAS, the Chicago Medical School does not now offer and has not ever offered the standards of medical instruction adopted by the University of Illinois and other high grade schools, and,

WHEREAS, the Chicago Medical School is not acceptable to membership in the Association of American Medical Colleges; and

WHEREAS, the graduates of the Chicago Medical School are not permitted to take the medical licensing examination in any state outside of Illinois, except the State of Massachusetts; and

WHEREAS, it is known that most of the alumni of the Chicago Medical School, recognizing the impossibility of making the institution conform to present day standards of medical education, now desire that the school be closed; therefore

Be it resolved, that the Illinois State Medical Society hereby requests the Governor and the State Department of Registration and Education, in order to determine whether in the interest of public welfare graduates of the Chicago Medical School should or should not hereafter be admitted to the medical licensing examination of the State of Illinois, to direct that a careful examination and appraisal be made of this school with respect to its organization, administration and financial resources; the qualifications of its student body and the character of its educational program; the adequacy of its laboratories and equipment for teaching and research and above all the kind, amount and accessibility of clinical facilities, together with the supervision and control of clinical teaching.

Dr. Ralph Peairs, Normal: I wish to introduce the following resolution.

3. PHYSICIANS' ASSOCIATION OF THE DEPARTMENT OF PUBLIC WELFARE OF THE STATE OF ILLINOIS

WHEREAS, the Physicians' Association of the Department of Public Welfare of the State of Illinois is a medical organization consisting of the greater majority of physicians employed in the Department of Public Welfare, and

WHEREAS, according to its constitution, its purposes are: (1) to improve the medical services of State institutions, (2) to provide for inter-relations and understanding between State

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institutions and its members, and (3) to cooperate with its parental organization, the Illinois State Medical Society and its local societies, and

WHEREAS, this organization has shown by its activities during the past three years definite advancement along these lines.

WHEREAS, it has given further proof of its activities, by conducting a sectional meeting of the Physicians' Association of the Department of Public Welfare at this Annual Meeting of the Illinois State Medical Society; now therefore, be it

Resolved, that the Physicians' Association of the Department of Public Welfare of the State of Illinois is hereby officially recognized by the Illinois State Medical Society as an ethical medical organization of the physicians in the Department of Public Welfare; and be it further

Resolved, that a copy of this resolution be forwarded to the Governor, the Director of the Department of Public Welfare, the State Alienist, the officers of the Physicians' Association of the Department of Public Welfare of the State of Illinois and to the managing officer of each state institution so that it might be presented to the medical staffs.

Dr. Frank F. Maple, Chicago: I wish to introduce the following resolution from the Chicago Medical Society. A copy of this resolution has already been submitted to Dr. Camp.

4. MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION TEACHING IN SCHOOLS OF CHIROPODY

At the May meeting of the Council of the Chicago Medical Society the question of members serving on the faculties of schools of chiropody was discussed.

Inasmuch as the American Medical Association has declared it unethical for members to teach in schools of optometry, it is the opinion of the Council of the Chicago Medical Society that the same ruling should apply regarding members of the American Medical Association teaching in schools of chiropody.

For the purpose of bringing this matter before the House of Delegates of the American Medical Association, this principle was approved by the Council of the Chicago Medical Society with a request that it be referred to the House of Delegates of the Illinois State Medical Society at its meeting in Springfield, Illinois, May 17, 18, 19, with the suggestion that it be approved and referred to the House of Delegates of the American Medical Association.

(Signed) Frank F. Maple,
Secretary, Chicago Medical Society.

The President: Is there any other new business to come before the House?

Dr. John S. Nagel, Chicago: On behalf of the Chicago delegation I would like to have a ruling on the number of delegates to the American Medical Association that Chicago will get. I believe under the agreement we had with downstate, that the extra delegate was given to the section having the preponderance of members. Last year the delegate went to downstate.

The Secretary: At the meeting four years ago we lost one delegate. At that time there was a big slump in membership of the Chicago Medical Society and the downstate had the majority of members. At the annual meeting four years ago the House of Delegates agreed that the group that had the largest membership should have the extra delegate and for four years downstate had five and the Chicago Medical Society four. Our check-up a few days ago showed 7,720 members of which Chicago has 4,418, so the Chicago Medical Society is now the larger of the two groups.

Dr. Nagel: Would you rule, Mr. Chairman, that the extra delegate will go to the Chicago Medical Society.

The President. That was a gentleman's agreement. The Chair so rules.

I have a telegram addressed to Dr. Harold M. Camp stating that Dr. Ernest Shaw, Chairman of the Medical Economics Committee, will represent the Iowa State Medical Society at our meeting. Dr. Shaw is here and it is my privilege to introduce him.

Dr. Shaw: Mr. President and members of the House of Delegates: I did not come here to speak; I came to try to find out about the medical survey. Dr. Neal attended our meeting last week and talked to our Secretary. After hearing how you run your business, I thought I would like to come and see what I could learn. I am glad to be here during the meeting of the Illinois State Medical Society.

The President: I believe the Secretary has another telegram.

The Secretary: I have a telegram from C. H. Goodrich, President of the Medical Society of the City of New York, stating that his organ-

ization is anxious to have the 1940 meeting of the American Medical Association in New York City, and asking that we bring the invitation to the attention of our delegates to the American Medical Association. This telegram is in accordance with the ruling of the American Medical Association that invitations for the annual meeting may be turned in three years in advance. That gives more time for the necessary investigation as to facilities.

The President: If there is no further business I will entertain a motion for adjournment.

Dr. C. E. Wilkinson, Danville: I move that we adjourn until nine o'clock Thursday morning. (Motion seconded and carried).

SECOND SESSION

Thursday Morning, May 19, 1938

The Thursday morning session was called to order at 9:30 A. M., by the President, Dr. R. K. Packard, Chicago.

The President: The first order of business will be the report of the Credentials Committee.

Dr. E. P. Coleman, Canton: The Credentials Committee has certified 110 delegates, 52 downstate, 50 Chicago Medical Society, and 8 members of the Council. I move that we accept this as the official body for this meeting. (Motion seconded by Dr. Mather Pfeiffenberger, Alton, and carried).

The President: The next order of business will be the reading of the minutes of the last session.

(The Secretary read the minutes and it was moved by Dr. R. H. Hayes, Chicago, that the minutes be approved. Motion seconded by Dr. A. E. Walters, Springfield, and carried).

The President: The next order of business will be the election of officers. Nominations are in order for President-elect.

Dr. Frank P. Hammond, Chicago: I would like to nominate Dr. James H. Hutton, Chicago. (Seconded by Dr. W. S. Bougher, Chicago).

Dr. P. B. Blodgett, Chicago Heights: I move that the nominations be closed and the Secretary cast the affirmative ballot for Dr. Hutton. (Motion seconded by Dr. Mather Pfeiffenberger, and carried).

The ballot was cast and the President declared Dr. Hutton elected.

The President: Nominations for First Vice-President are in order.

Dr. A. E. Walters, Springfield: I wish to nominate Dr. Harry Otten of Springfield. (Seconded by Dr. T. B. Williamson, Mt. Vernon).

Dr. C. E. Wilkinson, Danville: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Otten. (Motion seconded by Dr. Mather Pfeiffenberger and others, and carried).

The ballot was cast and the President declared Dr. Otten elected.

The President: Nominations for Second Vice-President are in order.

Dr. Percy E. Hopkins, Chicago: I wish to nominate Dr. C. A. Earle, Des Plaines. (Seconded by Dr. C. L. Crean, Chicago).

Dr. G. W. Post, Chicago: I move the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Earle. (Seconded by Dr. H. K. Scatliff, Chicago, and carried).

The Secretary cast the ballot and the President declared Dr. Earle elected.

The President: Nominations are in order for Secretary.

Dr. E. P. Coleman, Canton: I nominate Dr. Harold M. Camp, Monmouth, to succeed himself. (Seconded by Dr. Robert H. Hayes, Chicago, and others).

Dr. Lee O. Frech, Decatur: I move that the nominations be closed and the President instructed to cast the affirmative ballot for Dr. Camp. (Seconded by Dr. A. E. Walters, Springfield, and carried).

The President cast the ballot and declared Dr. Camp elected.

The President: Nominations are in order for Treasurer.

Dr. W. E. Kittler, Rochelle: I wish to nominate Dr. A. J. Markley of Belvidere to begin his twenty-seventh consecutive term as Treasurer of the Illinois State Medical Society. (Seconded by many).

Dr. E. H. Weld, Rockford: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Markley. (Seconded by Dr. A. R. Larrain, Chicago, and others, and carried).

The Secretary cast the ballot and the President declared Dr. Markley elected.

The President: The next order of business is the election of Councilors from the first, second, third and eleventh districts. I will entertain

nominations for Councilor from the First District, Dr. E. H. Weld retiring.

Dr. C. L. Best, Freeport: I wish to nominate Dr. E. H. Weld.

Dr. C. E. Wilkinson, Danville: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Weld. (Motion seconded by Dr. Andy Hall, Mt. Vernon, and carried).

The ballot was cast and the President declared Dr. Weld elected.

The President: Nominations for Councilor for the Second District, Dr. E. C. Cook retiring.

Dr. C. G. Pool, Compton: I nominate Dr. E. C. Cook. (Seconded by Dr. J. H. Edgcomb, Ottawa).

Dr. C. E. Wilkinson, Danville: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Cook.

The ballot was cast and the President declared Dr. Cook elected.

The President: Nominations for Councilor for the Third District, Dr. P. E. Hopkins retiring.

Dr. W. S. Bougher, Chicago: I nominate Dr. P. E. Hopkins. (Seconded by many).

Dr. G. W. Post, Chicago: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Hopkins. (Motion seconded by Dr. R. H. Hayes, Chicago, and carried).

The ballot was cast and the President declared Dr. Hopkins elected.

The President: Nominations for Councilor for the Eleventh District, Dr. E. S. Hamilton, retiring.

Dr. S. W. Lane, Kankakee: I wish to nominate Dr. E. S. Hamilton. (Seconded by Dr. A. E. Walters, Springfield).

Dr. E. P. Coleman, Canton: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Hamilton. (Motion seconded by Dr. R. H. Hayes, Chicago, and carried).

The ballot was cast and the President declared Dr. Hamilton elected.

The President: Nominations are in order for delegates to the American Medical Association, five to be elected, four from Chicago.

(Nominations were presented in each case and the following delegates elected: Charles J. Whalen, Chicago, John J. Pflock, Chicago, G. Henry Mundt, Chicago, R. K. Packard, Chicago, and E. S. Hamilton, Kankakee).

The President: Nominations are in order for Alternate Delegates to the American Medical Association, five to be elected.

(Nominations were presented in each case and the following alternate delegates at large elected: H. E. Quinn, Chicago, Gustav Kaufman, Chicago, C. E. Humiston, Chicago, M. I. Kaplan, Chicago, and Lee O. Frech, Decatur).

The President: Nominations are in order for members of Standing Committees.

(Nominations were presented in each case, the Secretary instructed to cast the affirmative ballot and the President declared them elected).

The following Committees were elected:

Public Relations: W. S. Bougher, Chicago, S. W. Lane, Kankakee, and Fred H. Muller, Chicago.

Medical Legislation: John R. Neal, Springfield, Mather Pfeiffenberger, Alton, and M. J. Hubeny, Chicago.

Medical Education and Hospitals: N. S. Davis, III, Chicago, W. R. Marshall, Clinton, and H. O. Munson, Rushville.

Medico-Legal: John R. Ballinger, Chicago, and C. U. Collins, Peoria.

Relations to Public Health Administration: E. H. Blair, Chicago, A. Gansvoort, Chicago, C. G. Pool, Compton, Thomas Meany, Chicago, and L. O. Frech, Decatur.

The President: The next order of business is fixing the per capita assessment for 1939; the present rate is $8.00.

Dr. John S. Nagel, Chicago: I move that the per capita assessment remain the same, eight dollars. (Motion seconded by Dr. George W. Post, Chicago).

Dr. P. B. Blodgett, Chicago Heights: It would seem to me with the reserve that we have built up, somewhat over what it was a year ago, and in view of the fact that it is a good bit harder for the average doctor to get money than it was a year ago, it would seem to me that this should be reduced rather than raised or left at the same level. I appreciate to some degree the work of the State Society and that money is needed to carry on the work, nevertheless I see a reserve that has been built up steadily from one year to another I suppose for a great emergency that will some day arise, and reserves are

built for a definite purpose. It would seem to me that in this new depression that the county societies should be given an opportunity not only to retain their membership but to carry on their activities, and in view of that fact I would like to amend the motion that the dues be made six dollars per year. (Motion seconded by Dr. A. R. Larrain, Chicago).

The President: I would like to call on the Chairman of the Finance Committee to discuss this.

Dr. Nagel: All this comes up each year and always gives an outlet for Dr. Blodgett and Dr. Larrain to make a speech. I am always glad to make a motion that the dues be the same or raised. There is no use in my making a speech. What I said last year before this House of Delegates holds true today. Let us vote on it. My original motion is that the dues remain the same.

The President: There is an amendment that the dues be made six dollars. I would like to say one word myself. We have many problems coming up, especially the survey to be made by the American Medical Association, so it does not seem to me that this is an opportune time to curtail the activities which this Society has to do. The original motion was that the per capita assessment be eight dollars per year and the amendment, to substitute the words six dollars per year. We will vote on the amendment.

(The amendment was lost).

We will now vote on the original motion.

(The motion that the per capita assessment be eight dollars was carried).

The next order of business is the selection of a meeting place for next year.

Dr. T. H. Culhane, Rockford: I move that the next meeting place be Rockford. (Seconded by many).

Dr. L. E. Day, Chicago: I would like to move an amendment that Rockford be the meeting place, but that the final decision be left to the Council after investigating the facilities of Rockford. (Amendment seconded).

Dr. Culhane: I accept the amendment.

Dr. E. H. Weld, Rockford: I would like to ask the privilege of the floor for Mr. Borden, Secretary of the Chamber of Commerce of Rockford.

Mr. Borden: I extend to you a most cordial invitation to come to Rockford. In making a survey of the facilities you have here, I believe we can equal or better them. I would appreciate your committee's coming to Rockford to investigate these facilities. I believe we can offer you accommodations as good or better.

Dr. Nagel: I think the Council should have the very last word with regard to the selection of a meeting place. The last time we were in Rockford the exhibits were on the top floor of the Faust Hotel and there were but two elevators, and part of the time one of these was out of service.

Dr. Culhane: I went into conference with the management of the Faust Hotel and all those things have been ironed out. The exhibits will be placed in rooms on the lower floors.

The Secretary: I have received several telegrams from the city officials of Rockford, the hotels, and other executives extending a very cordial invitation.

(Motion to make Rockford the meeting place for 1939, pending investigation by the Council, carried).

The President: The next order of business is the reports of the Reference Committees.

COMMITTEE ON REPORTS OF OFFICERS

Dr. G. Henry Mundt, Chicago: For many years in the past it has been customary for Officers, Councilors, and Committee Chairmen to report at each Annual Meeting of Delegates. While this had the advantage of encouraging the Councilors and Committee Chairmen to keep in closer touch with their activities, it has the disadvantage of being unnecessarily voluminous making it impossible to consummate the business of the Council at one single session, necessitating occasional extra special meeting. Therefore, the Council adopted the plan of printing the reports in the "Official Annual Reports" and abstracting the officers' reports for presentation to the Delegates at their annual session.

In the report of President R. K. Packard, he takes up the important problems confronting the medical profession of Illinois during the past year. The Medico-Legal defense as formerly carried on by the Society was discontinued by the Society last year because it seemed that this constituted unethical procedure as related to the Legal Bar Association. Some physicians throughout the state have expressed themselves that discontinuance removed one of the primary advantages of belonging to the Society and that dues, therefore, should be reduced. Dr. Packard explains that during the former legal defense procedure, the amount appropriated to that department was only one dollar per capita; furthermore, the Medico-Legal Committee is still rendering valuable service and at this session the Committee will report on a newly devised plan incorporating additional services to the members.

Care of the indigent still remains a serious problem,

not only for the profession but for society and industry as well. He recommends that the County Medical Societies should make a serious attempt to do away with the system of a township or county doctor and establish a system whereby the medical care of the indigent will be under the care of the County Medical Societies.

Providing of adequate medical care for all of the people must be considered as a medical problem and this can only be done by a concentrated effort of the profession with intelligent cooperation of other Illinois agencies, local boards of health, community chests, philanthropic associations, industry, and under extreme condition, federal, state and local funds. The survey to be made by our County Medical Societies as outlined by the American Medical Association, is our most immediate problem.

County Medical Societies should start in earnest under the direction of the State Society to formulate a uniform plan of survey and then work the plan. The Maternal Welfare Committee appointed by the Governor in conjunction with the one appointed by the State Society have been working harmoniously during the past year in the attempt to reduce maternal and infant mortality. Finally, there are many other problems confronting the Society which call for meditation, study, cooperation, and action by the Officers, Councilors, and County Societies.

I move the adoption of the President's report. (Motion seconded by Dr. L. O. Frech, Decatur, and carried.)

Report of President-Elect, Samuel E. Munson.—Dr. Munson extols the work of the State Committees which in their effort have lightened his duties. He has made numerous public appearances including the Kentucky State Association where he was made the guest of honor speaker, also before many other lay and medical groups on suggestions pertinent to the times, such as socialized medicine, medical care for all the people, medical economics, etc. He attended the Northwest Regional Conference of the American Medical Association in Chicago, February 13, 1938, and the annual conference of Secretaries of the Constituent State Medical Associations in November, 1938, and in all has enjoyed the apparent harmony and determination for progress in organized medicine. He closed by stating: "We must require and expect personal service from every member of the medical profession."

I move the adoption of the report of the President-elect. (Motion seconded by Dr. L. O. Frech, Decatur, and carried.)

Secretary's Report.—Dr. Harold M. Camp outlines in detail the outstanding achievements of the Illinois State Medical Society during the past twelve months. He informs the House of Delegates that the Illinois State Medical Society actually was formed in 1840 and operated as a society during the next ten years when the reorganization was perfected in 1850, with meetings annually thereafter. Therefore, this convention is the "98th Annual Meeting." The Society has assumed responsibility for discharging certain duties pertaining to various health activities provided in the Social Security Act. The Illinois plans for aid to crippled children, maternal and infant welfare, and control of syphilis have been developed and carried on in a commendable manner, the County Medical Societies assuming much of the responsibility.

The Maternal Welfare Committee appointed by the Council is functioning and has been more or less completed in the individual county units, arousing considerable interest in every community.

The Council has selected a committee to make a careful study of our problem of indigent medical care which has been operating successfully in other states. The study will be completed this year and an interesting report should be ready for the House of Delegates at the next annual meeting. The plan of making a county-wide health survey developed by the American Medical Association is one of the paramount problems for the State and County Societies in the near future. It is first necessary to acquaint the County Medical Societies and individual physicians as to the work that should be done. Then send them the proposed plans and instructions so that unnecessary delay may be avoided.

During the past year a Committee on Inter-professional Relations has been created by the Council to get a closer cooperation between the dental and medical professions. The Illinois State Dental Society has a committee to form a close relationship with our society. Other professional groups are expected to join.

The Committee on Constitution and By-Laws has recommended a change in the By-Laws of the Society formulating more definite methods of ethical discipline of members. Component county societies should study the plan and revise their by-laws to conform to those of the parent organization.

He reviews briefly the needs and numerous problems of the Council with commendation of the chairman and individual councilors, emphasizing the importance of unselfish service and efficiency of all.

The Fifty Year Group has at present, 196 members. The oldest is Dr. O. L. Pelton of Elgin, who is in his sixty-seventh year of practice. Another member is serving his sixty-sixth year and several have completed their 64th year. The Secretary's Office endeavors to render every possible service to the component societies and in many instances to individual members.

This is the eighteenth annual meeting since 1850, held in the Capitol city. The Sangamon County Medical Society has always been efficient in arranging and being hosts for our annual meeting.

The Hall of Health is a new venture with the sole purpose of showing the public what the medical and allied professions have been doing to safeguard the health of the citizens. The Committee on Scientific Exhibits has assumed responsibility for the Hall of Health this year and it is expected that the exhibit will be an annual event.

The present membership of 7,720 is the largest in the history of the Society and it is not impossible to report a total in 1939 of 8,000 members. He commends and thanks the many county secretaries for their splendid cooperation during the past year and it is only through constant cooperation that an organization can expect to survive and progress.

There are 7,720 members, a net gain this year of 284, and there is a total cash balance in the treasury of $50,433.17.

I move the adoption of the Secretary's report. (Seconded by Dr. T. B. Williamson, Mt. Vernon, and carried.)

Treasurer's Report.—Dr. A. J. Markley reports total cash and bonds assets of $114,433.17. He adds in his report a statement from Fred N. Setterdahl, licensed public accountant, "The records have been well kept and in my opinion my detailed report furnished your Council represents the true transactions for the year."

I move the adoption of the Treasurer's report. (Seconded by Dr. C. E. Wilkinson, Danville, and carried.)

Chairman of the Council.—E. P. Coleman reports that during the year a number of changes have been made in the methods of business that is handled by the Council and some problems have arisen that are entirely new in character. He informs the delegates of the change of officers, Councilors, and Committee reports as being practiced at this session. They are all printed in the "Official Annual Reports" and special committees have been appointed to bring in an abstract or brief of each individual report.

The malpractice defense problem was forced upon us unexpectedly a year ago, has been given a great deal of time and thought and a solution has been accepted as being the best obtainable and will be presented by the Medico-Legal Committee to the House of Delegates today.

One of the mandatory provisions under the Social Security Act is that which provides for a concentrated effort to improve the maternal and infant mortality rates. This now is a Feberal Law. The State Society must lend all help possible and should assume leadership.

The Fifty Year Group is an effective method of honoring the veterans in the Society. The County Societies should inspect and revise their by-laws to conform to the new plan for disciplining members which has been recommended by the Council and is hoped will be passed by the delegation at this convention.

Action against the illegal practice of medicine by corporations and fraternal organizations is being planned by every effective legal method. Dr. Coleman commends and thanks all counties, all committeemen, for their consideration and cooperation during the year. He concludes with, "it is believed that with a continuation of the Society's methods as practiced in the past, the future can be faced with equanimity."

I move the adoption of the report of the Chairman of the Council. (Seconded by Dr. E. E. Davis, Avon, and carried.)

The Committee has one recommendation to make. Inasmuch as both the Chairman of the Council and the Secretary recommend a change in the by-laws by many of the county societies, it is the opinion of the committee that it would be well for the Committee on Constitution and By-Laws to make a model set of by-laws and submit it to the county societies.

The President: That is a suggestion. If there is no objection it will be passed on to the Committee on Constitution and By-Laws.

Dr. F. P. Hammond, Chicago: I move the adoption of the report as a whole. (Motion seconded by Dr. E. S. Hamilton, Kankakee, and carried.)

COMMITTEE ON REPORTS OF COUNCILORS

Dr. C. B. Ripley, Galesburg: Your Committee feels that the reports of the Councilors are especially good and that each Councilor has shown real enthusiasm for his work during the year. However, the Committee wishes to make a few laudatory remarks and some kindly criticisms of certain of the statements as published under the individual reports of the Councilors.

First District.—We wish to approve our Councilor for work done and interest shown. Particularly do we approve his comment on contract practice.

Second District.—We commend the Councilor for his work and especially for his aggressiveness in the consideration of Group Hospitalization. Our feeling, however, is that any and all services connected with the work of physicians must be definitely divorced from any such plan.

Third District.—We congratulate the Councilors of this district in their report of their early work toward the control of clinics and corporate practice, and sympathize with them in their inability to cope successfully with these problems. We urge a continuation of their efforts along these lines. It seems to us that the Council as a whole should lend every support possible.

Fourth District.—We feel that this district has been well cared for during the past year and have no fear for the coming twelve months. The Councilor speaks of a "paying out program" yet to come. The real test of his ability should come when that becomes a reality.

Fifth District.—Although acting under the handicap of his first year of responsibility, our Councilor has given a splendid account of himself.

Sixth District.—We wish to commend the Councilor's insistence that everything possible be done to organize all counties so that the best of medical care may be available to all. However, his remarks about the lack of cooperation of the State Department of Health do not coincide with the experience of most of our districts, we believe. The opinion seems general over the State that the Department is most cooperative and that, under the present set-up, great progress is assured.

Seventh District.—The Committee feels that our Councilor should be congratulated upon his success in organizing his district to oppose Senator Lewis' bill and in having his counties undertake constructive work in the care of the low salaried classes.

Eighth District.—We commend the Councilor for his efforts in promoting social activities among his members and for his political acuity in making friends with his supervisors.

Ninth District.—We believe our Councilor has the situation in his counties well in hand. We congratulate him on his ability to stay young, although surrounded by fourteen fifty-year club members, and on his humorous way of blasting State Medicine.

Tenth District.—It is only necessary to read the Coun-

cilor's report to realize he has a most thorough knowledge of the activities of his individual societies.

Eleventh District.—The Committee is gratified to note that our Councilor has stressed the work in medical economics in all his counties.

Under the reports of the Councilors-at-Large, we wish to note three things. First, your advice to your members to appear on club, lodge and other lay programs in the effort to combat misinformation is of the best. Second, the report of the Councilor-at-large from East St. Louis deserves special mention. If, in the districts visited, our Councilor found that our traducers "are now on the defensive" we congratulate the doctors and the public in those localities, and wish a like condition for the rest of the State and Nation. We hope the doctor is right! All of his report deserves careful reading by every delegate and member.

Third, we believe that the Maternal and Child Welfare problems brought to Chicago by the attempted regulations of hospitals as forced by the Board of Health were handled in a masterful manner by our Councilor. We further believe that the Cities and Villages Act should be carefully studied and recommendations made for proper legislative action.

Conclusions

1. This Committee recommends that hereafter, as a sub-title under the heading of each Councilor's report, the counties in that district be listed.

2. Inasmuch as medical economics will determine the future of scientific medicine, we believe it should be the direct concern of each Councilor to interest his component societies in medical eonomic programs.

3. We urge that our able Council make an earnest effort to clarify and define the proper limitations of contract practice.

4. We approve the work being done in Cancer Control, Infant and Maternal Welfare, Crippled Children and other similar movements, but we insist that organized medicine be constantly on guard in order that all such be kept under medical control.

5. We approve the work of the Women's Auxiliary but believe it should have more careful and earnest support and counsel of our medical officers.

(Signed),
Oscar Hawkinson,
L. O. Frech,
C. B. Ripley, Chairman.

Dr. Ripley: I move that the report be accepted as a whole. (Motion seconded by Dr. L. E. Day, Chicago, and carried.)

COMMITTEE ON REPORTS OF STANDING COMMITTEES

Dr. George W. Post, Chicago: Your Committee respectfully submits the following report:

1. *On the Revort of the Public Relations Committee.*—The report of the Public Relations Committee speaks for itself. The work which it is doing is very valuable to the Illinois State Medical Society and the Committee should be heartily commended. Doubtless many members of the Society have recently discovered that it was easier to get insurance companies to listen to reasonable claims in the adjustment of bills for services rendered, and this is doubtless a result, in some measure at least, of the activities of this Committee. If there are any other difficult duties in line with their work we recommend that they be assigned to this Committee.

I move that the report of the Public Relations Committee be accepted. (Seconded by Dr. R. H. Hayes, Chicago, and carried.)

2. *On the Report of the Medico-Legal Committee.*—This report was carefully reviewed and one member of your House of Delegates Committee, by invitation, was privileged to sit with the Medico-Legal Committee. Your Committee recommends that the changes in the by-laws of the Illinois State Medical Society suggested by the Medico-Legal Committee be adopted, so that the said Medico-Legal Committee may be given the support of proper legal entrance into malpractice suits. This recommendation is as follows:

1. All members shall report to the Chairman of the Medico-Legal Committee all claims or suits made or brought against any member of the Socitey for malpractice.

2. A notice shall be printed on the membership card requiring that such reports be made.

3. Upon receipt of such report, it shall be the duty of the Medico-Legal Committee to make an investigation obtaining all possible information in regard thereto.

4. Such information to be obtained in order that the qualifications and status of the member so involved may be determined, and such information be disseminated among the members of the Society in order that similar claims or suits may be avoided.

5. It shall further be the duty of the Medico-Legal Committee in addition to the keeping of a record of such claims and suits, to keep a record of all judgments in malpractice suits and the expenses incurred in connection therewith, and from time to time confer with representatives of insurance companies writing malpractice insurance for the purposes of obtaining the best and most economical protection for the members of the Society."

Your Committee feels that although the function of the Medico-Legal Committee which was uppermost in the minds of the membership of the Illinois State Medical Society has been taken away from it, nevertheless, it still performs the most important functions as it always has done; namely, to preserve the friendly cooperation between the insurance companies and the doctors, which has resulted in making Illinois the state with the second lowest medical practice insurance rate in the United States. This has brought about the infrequence of the successful prosecution of malpractice suits against doctors and has made it possible for insurance companies to keep their rates as low as they are.

The matter of the former practice of the Illinois State Medical Society to pay the costs of the defense of malpractice suits was not exactly a proper function of the State Society as it virtually constituted a method of insurance against such malpractice suits, which should not be a function of the State Society. Each member should pay for his own insurance just as he

pays his own life, automobile, or fire insurance. Numerous attempts to form cooperative insurance companies have in most instances proven to be very unsatisfactory failures and the attempts of state medical societies to provide group insurance plans have in almost every instance failed signally to accomplish the end sought at anything like a reasonable price.

The work which the Medico-Legal Committee is now conducting is keeping the cooperation of the doctor, the lawyer who conducts the defense for the insurance company, and the companies who carry the doctor's insurance at their present very low level, and any abatement of that work and effort will result promptly in very material increases in insurance premiums, and might easily result in the refusal of any insurance companies to carry malpractice insurance as it has already done in some states.

Your Committee respectfully calls your attention to Section 6 of the By-Laws of the Illinois State Medical Society, the first paragraph and the last sentence, which reads, "Each component society shall elect one member to serve as 'Advisor' to this Committee." There seems to be much confusion as to what this sentence means, and your committee wishes to know if this is being done.

Your Committee recommends your hearty approval of the report of this Committee and the full support of its work. Actually it is doing the real work which it always did, and while it is a fact that the Illinois State Medical Society does not provide legal defense, yet the discontinuance of the work of this Committee will be a very costly experiment to the Society.

I move the adoption of the report of the Medico-Legal Committee. (Seconded by Dr. C. E. Wilkinson, Danville, and carried.)

3. *On the Report of the Legislative Committee.*—Your Committee endorses most heartily the report of this Committee, for this Committee and particularly its Chairman have been a bulwark of strength to the Illinois State Medical Society last year as well as for many years before.

Your Committee would suggest the closest cooperation between this Committee and the Legislative Committee of the American Medical Association in order that some of the embarrassing and disheartening situations, where such activities overlap be avoided, as these only serve to multiply the difficulties which already beset us.

Your Committee also would like to issue a word of warning against the sending of ill-advised and inconsiderate letters to Legislators by individual members of the Illinois State Medical Society. Such letters have in times past brought about the consideration of damaging legislation which would never have even been thought of if those letters had not been written.

I move that the report of the Committee on Medical Legislation be approved. (Seconded by Dr. A. E. Walters, Springfield, and carried.)

4. *On the Report of the Committee on Medical Education and Hospitals.*—The very voluminous and comprehensive report of this Committee is thorough, complete and is in accord with the best interests of our Society.

Your Committee feels that special stress should be laid on the item of this report concerning the influx of foreign doctors and their admission to practice in this State.

Respectfully submitted,
L. S. Reavley,
G. W. Post, Chairman.

I move that the report of the Committee on Medical Education and Hospitals be accepted. (Seconded by Dr. Mather Pfeiffenberger, Alton, and carried.)

I move the adoption of the report as a wohle. (Seconded by Dr. L. O. Frech, Decatur, and carried.)

COMMITTEE ON REPORT OF COUNCIL COMMITTEES

COMMITTEE A

Dr. Mather Pfeiffenberger, Alton:

1. *Educational Committee Report.*—The Committee heartily endorses the report and wishes to commend the Committee for its great amount of work and the large field covered by its publicity.

I move the adoption of the report of the Educational Committee. (Seconded by Dr. R. L. Reynolds, Chicago, and carried.)

2. *Scientific Service Committee Report.*—After carefully examining the report of the Committee, this Committee is of the opinion that the work of the Scientific Service Committee should be commended. Attention was called to the Committee where in one instance the speaker assumed too much of "The Holier than Thou" attitude to his downstate audience.

I move the adoption of the report of the Scientific Service Committee. (Motion seconded by Dr. F. O. Fredrickson, Chicago, and carried.)

3. *Medical Economics Committee Report.*—The Committee feels that this report needs no criticism or suggestion as we believe that the Medical Economics Committee has been more active and has had their hand on the pulse of the situation.

I move the adoption of the report of the Medical Economics Committee. (Seconded by Dr. W. S. Bougher, Chicago, and carried.)

4. *Special Committee on Indigent Medical Care Report.*—The report is very complete and exhaustive; and the recommendation is that the Committee receive all the cooperation and assistance which each individual physician can give.

Respectfully submitted,
E. R. Miner,
Arrie Bamberger,
Mather Pfeiffenberger, Chairman.

I move the adoption of the report of the Special Committee on Indigent Medical Care. (Seconded by R. H. McPherron, Chicago, and carried.)

I move the adoption of the report as a whole. (Seconded by Dr. R. H. Hayes, Chicago, and carried.)

COMMITTEE B

Dr. Frank F. Maple, Chicago: The reports were divided among the three members of the Committee.

Committee on Maternal Welfare.—This Committee, only a year old, with the Educational Committee of the State Society, have sponsored this very ambitious program. If you have read this report, you will realize that every physician in the state has been reached. This Committee and their report is becoming a model for other states, and several are already working on similar programs. These refresher courses, together with the intensive postgraduate course at the University of Illinois, have stimulated the interest in obstetrics, which is most timely when we read in every lay magazine something about obstetrics as practiced in America.

If you will note the personnel of this Committee, each Councilor District is covered, each county organized, and their four way plan proposed for a five year period. One paragraph in this report answers the frequent question concerning the American obstetrical mortality rate.

The far-reaching effect of the work of this committee, aided as they are by the Educational Committee, will encourage the individual to do better work; will meet all the demands of the Social Security Act, and answer the cry of the laity that something be done to better the quality of obstetrical practice.

Cancer Committee.—There is a definite effort by the American Society for the Control of Cancer to standardize the treatment of cancer so that the requirements of each case be met by the best known treatment for that case. Members of this Committee have made an intensive study guided by the already existing bureaus for the control of cancer. This Committee has enjoyed the counsel of several cancer groups and itself is now considered one of the major units in the national movement for the control of cancer.

Again I ask you to consider the personnel of this Committee, knowing that they are thoroughly able to guide us in this problem most important to all of us.

Dr. E. E. Davis, Avon: *Veterans' Service Committee.*—We wish only to congratulate the Veterans' Service Committee on their report of progress during the year. It is concise, complete and proper.

Scientific Exhibits.—We feel the Committee on Scientific Exhibits are too modest in saying the scientific exhibits speak for themselves. They should be praised to the extent of real advertisement. We agree that the point is well taken that the Hall of Health should be the work of the Educational Committee and they should be granted additional help by the Council.

Dr. P. J. McDermott, Kewanee: *Committee on Physical Therapy.*—We feel that this Committee while handicapped in getting information desired along these lines are, however, doing constructive work and should be continued.

Fifty Year Club.—Your Committee in looking over the report of this Committee feel that the members are doing grand work in establishing said Club, and believe the recommendations of said Committee to have a certificate signed by the President and Secretary of the State Society and Chairman of the Council and be presented to these men with lapel button, a good suggestion.

Dr. Maple: I move that the report as a whole be adopted. (Motion seconded and carried.)

COMMITTEE C

Dr. Walter Stevenson, Quincy: 1. *Interprofessional Relations Committee.*—Dr. Skaggs reports progress. This Committee should be of real value to our Society. It appears that much good could come from a mutual exchange of speakers on our programs, that is, between State Dental and Medical Societies. This Committee is commended and the report approved.

I move the adoption of the report. (Seconded by Dr. T. B. Knox, Quincy, and carried.)

2. *Control of Syphilis Committee.*—In spite of the fact that no regular meeting of this Committee was held, the Committee is to be commended for the activities of individual members in cooperating with the State Department of Public Health in providing programs for education of the public in the campaign against venereal disease.

Apparently the Committee considered the discharge of the Laboratory Advisory Committee a wise move, inasmuch as the statement is made that the Illinois Department of Public Health has already started a policy of approving laboratories throughout the State. Frequent inspection of such laboratories necessitates more bureaus and it would seem that therein is duplication of effort since the American Medical Association has already provided for approval of laboratories that measure up to their standards. This Committee can certainly accomplish more in the future. The appointment of an Advisory Board is commended for surely the general profession can lend aid to a Department of Public Health even if only in an advisory capacity.

I move that the report of the Committee on Control of Syphilis be approved. (Seconded by Dr. G. W. Post, Chicago, and carried.)

3. *Ethical Relations Committee.*—Your Committee approves the report of this Committee in its entirety, but we feel that portion of the report which infers that the various County Societies have constitution and by-laws, which are not uniform concerning ethical relations of members, should be emphasized and steps should be taken to make them so. The report shows evidence of much study and thought.

I move the adoption of the report of the Ethical Relations Committee. (Seconded by Dr. G. W. Post, Chicago, and carried.)

4. *Committee on Constitution and By-Laws.*—This report is approved and the Committee commended.

I move the adoption of the report of this Committee. (Seconded by Dr. L. E. Day, Chicago.)

Dr. C. B. Reed, Chicago: Both of these measures have received the approval of the Committee on Constitution and By-Laws. (Motion carried.)

5. *Committee on Corporation Practice of Medicine.*—No written report is available to this Committee for consideration. An informal verbal report was made by the Chairman of this Committee, stating that because of lack of funds the Committee had been unable to function. Just what function this Committee was expected to fulfill, which requires the expenditure of funds, we, of course, do not know.

I move the adoption of the report. (Motion seconded by Dr. E. P. Coleman, Canton, and carried.)

6. The supplementary report made by the Chairman of the Council regarding the institution of a section for Pediatrics and Obstetrics is approved, as is the balance of his supplementary report regarding the Committee on Ethical Relations and changes in constitution and by-laws.

Respectfully submitted,
Frank L. Brown,
J. C. Krafft,
Walter Stevenson, Chairman.

Dr. Stevenson: I move that the supplementary report by the Chairman of the Council be adopted. (Motion seconded by Dr. E. P. Coleman, Canton.)

Dr. Mundt: May I state that when I made the motion at this meeting of the House of Delegates I was not trying to put out of commission the establishment of sections on Pediatrics and Obstetrics. (Motion carried.)

Dr. Stevenson: I move the adoption of the report as a whole. (Motion seconded by Dr. T. B. Williamson, Mt. Vernon, and carried.)

COMMITTEE ON SCIENTIFIC WORK, SOCIAL SECURITY PROBLEMS AND REPORT OF THE EDITOR

Dr. Robert H. Hayes, Chicago: *Scientific Work.*—The Committee wishes to commend the chairman and secretaries of the scientific sections for their quality selection of the subjects presented at this session. We beg to suggest that in the future all presentations be limited to a definite time schedule, and all discussions be limited to three or five minutes and this ruling be strictly adhered to. We are of the opinion that this would furnish more interest and allow a greater number of discussants to participate, thus causing a greater personal interest to those in attendance.

I move the acceptance of this portion of the report (Motion seconded by Dr. Charles Papik, Chicago, and carried.)

Social Security Problems.—In the consideration of the Social Security problem, your Committee believes that the Committee on Economics has handled the problem of social security as to its effect on the practice of medicine most admirably. We feel that they have kept abreast of the local, state and national problems, and wish to make no further comments other than that this committee continue its efforts and that all medical men in this state give their unanimous cooperation with all local and national health administrations, especially in regard to the present campaign against syphilis and for maternal welfare, and crippled children.

I move the acceptance of this report. (Motion seconded by Dr. W. S. Bougher, Chicago, and carried.)

Maternal Welfare Committee.—The Maternal Welfare Committee under the chairmanship of the district councilor is to be commended for their arduous activity in coordinating the educational campaign in the counties of this state, and we recommend that they should be encouraged to further this campaign of education.

I move the acceptance of the report of this Committee. (Motion seconded by Dr. P. J. McDermott, Kewanee, and carried.)

Report of the Editor.—The report of the Editor as published in the annual report needs no criticism from this committee; however, the Editor should be commended for his clearness of expression and his manner of keeping the medical profession of this state constantly informed of the many efforts to discredit the truly scientific and humanitarian side of medicine in this country as compared with foreign countries. Your Committee is thoroughly in accord with his persistent fight against paternalism, bureaucracy, centralization of political control of medicine, unqualified admission to license to practice medicine, especially in reference to cults and charlatans, and the attempts of moneyed foundations to despotism in professional mandates. We wish to concur with his constant demand to organized medicine of the necessity of unification of all endeavors to coordinate local, state and national medical organizations to full capacity.

We wish to recommend that releases of many of the articles appearing in the JOURNAL of the State Medical Society be distributed to local newspapers throughout the state so that the public may better become aware of the purpose of medical organization.

Respectfully submitted,
A. E. Walters.
S. B. Peacock.
Robert H. Hayes, Chairman.

Dr. Hayes: I move that the report of the Editor be approved. (Motion seconded Dr. P. J. McDermott, Kewanee, and carried.)

Dr. Hayes: I move that the report as a whole be adopted. (Motion seconded by Drs. W. S. Bougher and L. E. Day, Chicago, and carried.)

COMMITTEE ON MISCELLANEOUS BUSINESS

Dr. G. E. Johnson, Chicago: *The Woman's Auxiliary.*—The report of the Woman's Auxiliary shows that they have done and are doing some very valuable work and should be encouraged and assisted at every opportunity as they are one of our best mediums of getting much needed education to the laity, which they can do so well through their affiliations with various women's organizations. One way they should be aided would be to materially reduce the subscription to *Hygeia* so they could get it into more lay homes.

I move that the report of the Woman's Auxiliary be adopted. (Motion seconded by Dr. H. K. Scatliff, Chicago, and carried.)

Hall of Health.—The Hall of Health is a splendid conception and judging by its first year's success it should become one of our major activities, although it seems a bit too extensive and more scientific or technical than need be for presentation to the laity. Its descriptive literature and booklets should be simplified and written in terms intelligible to the average layman, stressing disease prevention, the necessity for prenatal care, early competent medical advice, etc., without too

much of the mechanism of disease and methods of treatment.

Respectfully submitted,
P. R. Blodgett.
C. W. Carter.
G. E. Johnson, Chairman.

I move the adoption of the report on the Hall of Health. (Motion seconded by Dr. L. E. Day, Chicago, and carried.)

Dr. Johnson: I move the adoption of the report as a whole. (Motion seconded by Dr. M. L. Hartman, Belvidere, and carried.)

COMMITTEE ON RESOLUTIONS

Dr. T. H. Culhane, Rockford: I wish to state that there are members of the press in this room or in the anteroom, who wish to hear these resolutions.

Dr. G. Henry Mundt, Chicago: I move that we go into Executive Session. (Motion seconded by Dr. G. W. Post, Chicago, and carried).

The President: I will ask Dr. W. S. Bougher to act as sergeant-at-arms to see that the room is cleared of all but delegates and officers.

Dr. W. E. Kittler, Rochelle: I ask that the alternate delegates be permitted to remain.

The President: The Chair so rules.

Dr. James H. Hutton, Chicago: I move that the assistant secretary of the Chicago Medical Society be permitted to remain.

The President: I so rule.

Dr. W. E. Stevenson, Quincy: I would like to have the Chairman of our County Society to remain.

The President: The Chair so rules.

Dr. T. H. Culhane, Rockford: The Resolutions Committee wishes to present the following report.

1. *The Relation of Physicians and Hospitals*
(See Page 56)

Dr. Culhane: The Committee recommends that the House of Delegates accept the principles set forth in this resolution but because some of its sections are indefinite and other appear unworkable in certain sections of the State, it is recommended that this be endorsed for further study in the hope that its provisions may be clarified and so worded as to be applicable to all parts of the State. I move the adoption of this resolution. (Motion seconded by Dr. Oscar Hawkinson, Chicago).

Dr. Walter Stevenson, Quincy: I move as an amendment that this resolution be referred to the Council. (Seconded by Dr. Mather Pfeiffenberger, Alton, and carried).

The original motion as amended, to refer the resolution to the Council was carried.

2. *Chicago Medical School*
(See Page 62)

Dr. Culhane: Your Committee has spent considerable time on this resolution and called before it representatives from teaching schools as well as representatives of the Chicago Medical School. The latter claim that some of the statements in the resolution are not in accord with the facts, namely, they deny that the alumni desire to close the school. They claim that certain improvements including the acquisition of a hospital are now in process of accomplishment. They claim to believe that within a few months they will be able to make such changes as will secure recognition for the school. If the foregoing is not accomplished they say they themselves will vote to close the school. Other men spoke in behalf of the resolution. In view of the conflicting opinions and statements which came to the Committee it recommends that this resolution be referred to the Council. The Committee further recommends that the House of Delegates concur in such action as the Council may take. I move the adoption of these recommendations. (Motion seconded by Dr. A. E. Walters, Springfield, and carried).

Dr. G. Henry Mundt, Chicago: That portion of the recommendation that the House of Delegates concur in such action as the Council may take will vitiate the motion of the Chairman. I move a reconsideration because this House cannot approve in advance the action of the Council. (Motion seconded by Dr. L. O. Frech, and carried).

Dr. Mundt: I move that the recommendation of the Chairman of the Resolutions Committee that this resolution be referred to the Council for action be approved. (Motion seconded by Dr. D. B. Pond, Chicago, and carried.)

3. *Physicians' Association of the Department of Public Welfare of the State of Illinois*
(See Page 63)

Dr. Culhane: I move the adoption of this resolution. (Motion seconded by Dr. A. W. Meyer, Bloomington, carried.)

4. *Liaison Committee Between American Med-*

ical Association and the Governmental Agencies

WHEREAS, the government has already entered the practice of medicine through relief, syphilis campaigns and various other agencies, and

WHEREAS, the doctor fares rather badly in the relief campaign because he was not represented in the formulation of that policy, and

WHEREAS, the social security and public health service and other government agencies probably contemplate further measures affecting the doctor, and

WHEREAS, locally the relation of the profession to the relief administration is cordial and the best that can be obtained under the policy formulated in Washington, and

WHEREAS, this is due to the fact that a few representatives of the profession were able, because of their entreé to certain agencies and because of their efforts, to establish definite friendly relations with the relief administration, and

WHEREAS, the Educational Committee has accomplished most of its good by cooperating with various organizations and by sitting in on their councils and offering constructive suggestions, and

WHEREAS, the American Medical Association has no liaison committee to meet with the government agencies during the formative stage of their policies and the inaugurating of their programs, and this in spite of the earnest, skilful efforts of the staff of the American Medical Association headquarters, and

WHEREAS, their greatest usefulness lies in the attack that they have already initiated and carried on so skilfully,

Therefore be it resolved, that the House of Delegates of the Illinois State Medical Society ask its delegates to the American Medical Association to use their efforts toward securing the appointment of a liaison committee to act in behalf of the American Medical Association in offering counsel, suggestions and constructive criticism of such policies as may originate with the government agencies, to the end that the greatest good may accrue to the low income group for whom they are presumably intended, with the least possible damage to the medical profession and without impairment of the advantages to be derived by the government.

Dr. Culhane: I move the adoption of this resolution. (Motion seconded by Dr. Robert H. Hayes, and carried.)

5. *Policy of the Council on Foods with Reference to the Recognition of Substitutes for Dairy Products*

WHEREAS, one of the main objectives of the Council on Foods of the American Medical Association is for improvement in the nature of advertising; and

WHEREAS, the Council on Foods has changed its policy and no longer considers and "accepts" butter and other natural dairy products; and

WHEREAS, since discontinuing its acceptance of butter it has given its seal of acceptance to substitute products, such as oleomargarine, sold under names; and

WHEREAS, this policy of the Council on Foods has encouraged commercial firms to advertise such products as being accepted by the Council on Foods, used by the medical profession and approved by the medical profession at large; and

WHEREAS, this policy of the Council is bringing much criticism on the profession at large from the dairy interests of the country; and

WHEREAS, the medical profession has always advocated the liberal use of natural dairy products in the interest of public health; and

WHEREAS, the profession at large does not want to be held responsible for a policy which discriminates against the natural dairy products in favor of the margarine class of products; be it

Resolved, by the House of Delegates of the American Medical Association, the Council on Foods be requested to change its policy in such manner as will eliminate this basis for warranted and undesirable criticism of the medical profession and of the American Medical Association;

Resolved, that the delegates of the Iowa State Medical Society be instructed to present this action to the House of Delegates of the American Medical Association at the annual meeting in San Francisco in June, 1938.

(Adopted by the House of Delegates of the Iowa State Medical Society, May 13, 1938.)

Dr. Culhane: This resolution was adopted by the House of Delegates of the Iowa State Medical Society, May 13, 1938, and has been sent to the Illinois State Medical Society asking their

concurrence in a similar action. The recommendation of your Resolutions Committee is that this resolution be referred to the Council for investigation of the problem, and after such investigation to make a decision as to whether the resolution should be adopted or not. I move that the resolution be referred to the Council. (Motion seconded by Dr. E. P. Coleman, Canton, and carried.)

6. *Members of the American Medical Association Teaching in Schools of Chiropody*

(See Page 65)

Dr. Culhane: We went into this resolution very carefully. Some members of the Committee felt that optometrists and those who practice chiropody are not on the same footing. It was felt that members of the medical profession in good standing frequently recommend to their patients to go to chiropodists, and it was also felt that many members of the medical profession and the medical schools are to blame for not teaching medical students anything regarding feet. The Committee recommends that the resolution be not adopted, and I so move. (Motion seconded by Dr. Robert H. Hayes, Chicago.)

Dr. Mundt: I think I am possibly as much responsible for the action in the Council of the Chicago Medical Society as anyone. I think it is time that we have a ruling from a higher body. I believe if this body will reverse the recommendation of the Chairman of the Committee, for whom I have the very highest regard, it will be doing a favor to medicine because we will get a ruling from the American Medical Association on this problem. There was a problem in Chicago of the so-called unapproved school of chiropody, and the desire in that resolution is simply to carry the question to the court of last appeal, the American Medical Association, so that we may know about approved schools of chiropody having medical men on their faculties. It seems to me it is a perfectly feasible thing to do this. I would like to further enlighten the Chairman that he is mistaken if he thinks members of the medical profession do not recommend patients to optometrists. I wish the Committee would appreciate that the only way to get it settled is to take it to the American Medical Association. I move that we lay it on the table. (Motion seconded by Dr. N. S. Davis III, Chicago, and lost.)

Dr. A. R. Larrain, Chicago: I move that the resolution be rejected. (Motion seconded.)

Dr. James H. Hutton, Chicago: In recommending that this resolution be not adopted the Committee were moved by two things. In the first place, we do not believed that optometrists and chiropodists are on the same basis. Secondly, there are a good many doctors who send patients to chiropodists. I would much rather send a patient to a chiropodist who was taught by some member of the medical society than to a man who has not had such training. If there are schools of chiropody that are recognized, I think we should rule against members who teach in unrecognized schools.

Dr. Larrain: There is an agreement between the Council on Medical Education of which Dr. F. P. Hammond is a member and the National Board of Chiropody whereby any reputable school of chiropody that is approved by this National Board is considered ethical by the American Medical Association, which gives the county and state societies power to consider ethical any schools of chiropody approved by the National Board and vice versa. Dr. Mundt is commanding the House of Delegates to take action. If they want to have an answer to this question, they should direct the Secretary of the State Society to write officially to the Council on Medical Education. Unfortunately this resolution was introduced under new business in the form of a resolution in the Council of the Chicago Medical Society when two-thirds of the members had left. Had it been introduced in the form of a motion during official business, I am sure it would have been discussed in the Council.

Dr. Frank P. Hammond, Chicago: What we need not only in the Chicago Medical Society but in the Illinois State Medical Society is to get a ruling from higher up. What I am asking for and what Dr. Mundt wants is to get a ruling from higher up. Dr. Larrain has asked that the Secretary get a ruling from the American Medical Association. The Chicago Medical Society has written that letter. What we want is to pass this resolution and let the American Medical Association give a ruling.

The President: The motion to reject the resolution is before the House. (Motion lost.)

Dr. Hammond: I move the adoption of the resolution and referred by the House of Delegates of the Illinois State Medical Society to the

House of Delegates of the American Medical Association. (Motion seconded by Dr. Robert H. Hayes, Chicago, and carried.)

7. *Use of Professional Titles by Non-Medical Organizations*

Upon motion duly made, seconded and carried, it was resolved that the House of Delegates of the Illinois State Medical Society is unanimously opposed to the recent usage of the words "doctor", "hospital", and "professor" by inferior tradesmen; for example, "shoe doctor", "radio hospital", "Professor of dancing," and that a law be passed rendering such offenses criminal.

Dr. Culhane: This resolution was introduced by Dr. John D. A. Gatsos, delegate from Carroll County. The Committee recommends that the resolution be not approved, and I so move. (Motion seconded by Dr. Robert H. Hayes, and carried.)

8. *Meeting of Secretaries Conference on Tuesday Evening*

WHEREAS, the Secretaries' Conference has grown to be one of the most important events of the Annual Meeting of the State Society, and

WHEREAS, the programs are of the most compelling interest to everyone interested in the future of medicine, and

WHEREAS, the Tuesday morning hour is too early for a representative audience and has too many important conflicts, therefore

Be it resolved, that Tuesday evening be designated for this program, and that the General Secretary make the necessary adjustments.

Dr. Culhane: This resolution was introduced by Dr. C. B. Ripley, delegate from Knox County. The Committee recommends its adoption, and I so move. (Motion seconded by Dr. L. O. Frech, Decatur, and carried.)

9. *Survey of Medical Care*

WHEREAS, the Trustees of the American Medical Association have directed the various state societies to conduct a survey of medical care, and

WHEREAS, the various state societies are expected to finance this survey, and

WHEREAS, the cost of a properly conducted survey necessitates the expenditure of a considerable amount of money, therefore

Be it resolved, that the delegates from Illinois to the House of Delegates of the American Medical Association be and are hereby instructed to request the American Medical Association to bear a proportionate share of the cost of this survey.

Dr. Culhane: This resolution was introduced by Drs. P. R. Blodgett and Percy Hopkins of the Chicago Medical Society. The Committee approves the resolution and I move its adoption. (Motion seconded by Dr. W. E. Burgett, Bement.)

Dr. L. O. Frech, Decatur: I would like to amend the motion that the American Medical Association, bear fifty per cent of the expense. (Motion seconded.)

Dr. E. S. Hamilton, Kankakee: I think the amendment should not be adopted. We are tying the hands of delegates, and you should not absolutely tie their hands.

Dr. P. R. Blodgett, Chicago Heights: It seems to me that if we leave the resolution as it is, the delegates to the American Medical Association will be able to determine what share of this expense should be borne by the national body. I do not think it is fair to the delegates to place a restriction upon them.

Dr. J. S. Nagel, Chicago: The State of California spent $100,000 on this survey. I wonder whether the Illinois State Medical Society is prepared to go through with this.

Dr. Charles J. Whalen, Chicago: The W. P. A. stood 60 per cent and the state of California 40 per cent.

The Secretary: That was a different proposition, as it was a survey within the state of California of a different nature, and has no bearing on the proposed nation-wide survey of medical facilities and medical needs.

Dr. W. E. Kittler, Rochelle: Is the Illinois State Medical Society prepared to spend $60,000?

The President: That has been under consideration and it does not relate to the resolution. The Council has put the maximum it will spend.

Dr. L. O. Frech, Decatur: My amendment was intended to convey the idea of asking the American Medical Association to pay 50 per cent. After all, this survey is their baby not ours and if they expect us to cooperate which we are glad to do, we should have a definite figure in mind.

Dr. John R. Neal, Springfield: I think some of you are not aware of the progress made in

Illinois and there has not been a dollar spent. I differ somewhat with Dr. Frech when he says that it is the American Medical Association's problem; it is the problem of the individual physician who is a member of the American Medical Association. It is going to be necessary to prove the fallacy of the many articles in American magazines whose authors, unsupported by any factual data, believe that the people are getting poor medical care. We, the physicians of the country, are going to show the true condition of affairs by this survey. Here is an opportunity for the individual physician to aid by contributing his clinical experience in regards to the care of the indigent. I am not opposed to going to the American Medical Association to ask them for money but I do feel that Illinois should go ahead with this plan and the physicians should show a real cooperative spirit. I do not think we will make any mistake in proceeding with our work.

Dr. Frech: I agree with what Dr. Neal has said. It is our problem but I still maintain it is the American Medical Association's baby, and let us ask for that.

The President: The original motion is that the American Medical Association be asked to bear a proportionate share of the cost of this survey; the amendment that they stand 50 per cent. We will vote on the amendment. (Amendment lost, and the original motion carried.)

10. *Resolution of Appreciation*

Resolved, that the Secretary be instructed to write proper letters to thank all those responsible for the fine cooperation received at this annual meeting as per the usual custom.

Dr. Culhane: I move the adoption of this resolution. (Motion seconded by Dr. R. H. Hayes, Chicago, and carried.)

Dr. James H. Hutton, Chicago: Certain information has come to me since we considered the resolution on Schools of Chiropody, that the Columbia University and New York Universities have such schools. I would like to move reconsideration of that motion. (Seconded by Dr. L. E. Day, Chicago.)

Dr. Mundt: The University of Ohio has a school of optometry and even if Columbia University has a school of chiropody that should not change our resolution, asking the American Medical Association for an answer. There is an underground current that will make it a little difficult for some of you to understand why the opposition. I happen to know. I think it is essential that we get a ruling on this. With all the respect I have for Dr. Hutton I must say that we should reject his motion to reconsider.

Dr. Larrain: I would like to ask Dr. Mundt whether the purpose of the resolution is to primarily get a ruling from the American Medical Association. Why not make a request for a ruling that these practices are unethical. I believe Dr. Mundt could change his resolution.

(Motion to reconsider is lost.)

NEW BUSINESS

The Secretary: I have the report of the Committee on Awards of the Scientific Exhibits Committee.

CLASS I.

Silver Medal

"Experimental Intersexuality in Rats."—R. R. Greene, M. W. Burrill, A. C. Ivy, Northwestern University College of Medicine, Chicago.

Bronze Medal

"What Is Normal Blood Pressure?" Samuel C. Robinson and Marshall Brueer, Chicago.

Certificates of Merit

"Production of Genital Growth in the Male." W. O. Thompson and N. J. Heckel, Rush Medical College and Presbyterian Hospital, Chicago.

"Experimental Production of Homogeneous Osteoporosis in Dogs." R. A. Bussabarger, Smith Freeman, A. C. Ivy, Northwestern University College of Medicine, Chicago.

"Catgut Absorption — Experimental and Clinical Study." Hilger Perry Jenkins, University of Chicago, Department of Surgery, Chicago.

CLASS II.

Silver Medal

"Diagnosis and Treatment of Pneumonia." Medical Department, Northwestern University College of Medicine.

Bronze Medal

"Puerperal Sepsis." Department of Public Health, State of Illinois, Henry Horner, Governor; Frederick H. Falls, Maternal and Infant Hygiene, and the University of Illinois College of Medicine, Department of Obstetrics and Gynecology, Chicago.

Certificate of Merit

"Bronchography in Bronchial Asthma." Emmet F. Pearson, Springfield.

CLASS III.

Hall of Health
Silver Medal

"Foreign Bodies in Lung and Oesophagus." Department of Bronchoscopy, University of Illinois College of Medicine.

Bronze Medal

"Public Health Service and Preventive Medicine." State Department of Public Health, A. C. Baxter, Acting Director, Springfield.

Certificates of Merit

"Recovery" and "Trachoma Clinics." Department of Public Welfare, State of Illinois.

"The Heart and Lungs Through Forty Centuries." Northwestern University School of Medicine.

"Progress of Scientific Medicine in a Small City." Pinckneyville Junior and Senior High Schools.

Dr. G. Henry Mundt, Chicago: I move that we rise from executive session. (Motion seconded and carried.)

ELECTION OF EMERITUS MEMBERS

The Secretary: We have twelve candidates for emeritus membership. They are physicians who have been members of the Society for thirty-five years or more and have attained the age of 70. The list follows:

Champaign County: Dr. John Marten, Tolono.
Chicago Medical Society:
Dr. Joseph Beck.
Dr. Frances Dickinson.
Dr. John A. Dinwoody.
Dr. Maurice L. Goodkind.
Dr. Gustav Kolischer.
Dr. Leslie W. Schwab.
Dr. John J. Stoll.
St. Clair County:
Dr. G. G. Bock, Smithon.
Dr. B. H. Portuondo, Belleville.
Dr. Charles H. Starkel, Belleville.
Schuyler County:
Dr. A. W. Ball, Rushville.

Dr. C. B. Ripley, Galesburg: I move that these physicians be made Emeritus members. (Motion seconded by Dr. E. E. Davis, Avon, and carried.)

HOME FOR INDIGENT DOCTORS

Dr. J. S. Nagel, Chicago: I am moved to present a matter to you because we always resolute, move and second to do something for the dear public. That is an important part of our duties in the House of Delegates. I now come before you with a proposition and ask you to do something for the doctors. My proposition is that we establish a fund from the downstate societies and from the Chicago Medical Society for the purpose of establishing a retreat for the indigent doctor and his wife or even his widow. I shall not take up your time because I want you to think it over. This is nothing new so far as homes are concerned. There are one or two states in the Union that have such propositions before them. I move that the House of Delegates recommend to the Council that they study the proposition of establishing a retreat or home for indigent doctors and report back next year. (Motion seconded by Dr. A. R. Larrain, Chicago, and carried.)

The President: I will ask Dr. John R. Neal to escort Dr. Samuel Munson to the speaker's rostrum.

This is the great pleasure that I have of handing this gavel over to Dr. Munson and declaring him from this time on President of the Illinois State Medical Society.

Dr. Munson: Officers of the Illinois State Medical Society and Members of the House of Delegates: This is the first opportunity I have had to thank you for my election last year to the office of President-Elect of the State Society. It is now my very great pleasure to thank you for the great honor of becoming President of this scientific body of men that represent the Illinois State Medical Society.

I deeply feel the responsibility of being placed in the position of planning and working with you during the coming year. The only way in which I can successfully fulfill this great responsibility is by your cordial and hearty cooperation in meeting our affairs and responsibilities.

The Illinois State Medical Society is placed in the position of being one of the most influential of any of the states, ranking among the first in number of physicians. Through its delegates its influence is of first importance in the House of Delegates of the American Medical Association. Its strenuous opposition is well known to all forms of socialization of medicine or unethical practice, as demonstrated by its successful effort to maintain a medical practice act that stands without a challenge as being one of the best that has been enacted by any of the states.

Medicine is now at the cross-roads as to whether it shall continue its opposition to the socialization of medicine or accept the federalization of medical care. Most of you, at least

through the Secretaries' Conference, have been made aware the last few days of the outline for the proposed plan of the study of medical care, to be presented by the Board of Trustees of the American Medical Association, not only to each State Society, but through the State to each constituent County Medical Society, to determine if we are really utilizing to the fullest extent the medical and health agencies now available with the established policies of the American Medical Association.

To those who have given this problem any preliminary thought, this is considered one of the greatest tasks that the medical profession has been asked to meet. First, through the Council of the Illinois State Medical Society and through your House of Delegates who have accepted the task of making this survey, I am asking as your first duty the coming year that you will meet this responsibility with a determination of carrying it to a successful conclusion. The cost of the preliminary work has been mapped out and the plans and questions will be in the hands of your county officers and special committee within a few days.

The postgraduate work that was given last year throughout the State in the refresher courses on Pediatrics and Obstetrics, to better our statistics in infant and maternal mortality, is only a beginning of what is already being accomplished by other states. The Committee on Medical Economics and Hospitals of the American Medical Association has urged that postgraduate medical education be promoted in the County and District Medical Societies. These are only some of the problems which lie before us, pressing for solution in which I am asking your hearty cooperation.

Dr. John S. Nagel, Chicago: I move a rising vote of thanks for the courteous manner in which the retiring President has conducted the business of this Society. (Motion seconded by many and carried.)

Dr. Munson: I have the privilege of introducing to you the President-elect, Dr. James H. Hutton.

On motion duly made and seconded, the House of Delegates adjourned *sine die* at 12:00 Noon.

If you have knowledge, let others light their candles at it.—*Margaret Fuller.*

MIRACLES OF HEALING

Achieved Through Experiments With Animals

The Illinois Society for the Protection of Medical Research announces that seven of mankind's major victories in the war against disease have been won through experimenting with living animals.

Such experimentation, the society says, has enabled medical science to do these things:

Make operations painless through the use of anaesthesia and analgesia.

Produce serums for use against smallpox, diphtheria, lockjaw, scarlet fever, rabies, etc.

Develop antiseptic and aseptic materials and methods, preventing wound infections and blood poisoning.

Become acquainted with symptoms of many diseases.

Acquire knowledge on which is based the use of insulin for diabetes, thyroid extract for children of inferior physical and mental development and liver extract for the treatment of pernicious anaemia.

Prevent rickets, scurvy, polyneuritis, pellagra, etc., through control of nutrition.

Obliterate cholera, plague, yellow fever and childbirth fever through knowledge of germs.

Earnest men and women demanding laws to end vivisection should consider thoughtfully that list of medical achievements.

Their sympathetic love for dumb animals is admirable, but perhaps they carry it too far in trying to stop altogether a work that has done so much to make humanity stronger, freer and happier.

THE CRUCIAL TEST

It is easy enough to be pleasant
 While life flows by like a song,
But the man worth while is the one who will smile
 When everything goes dead wrong.
For the test of the heart is trouble,
 And it always comes with the years,
And the smile that is worth the praises of earth
 Is the one that shines through tears.

It is easy enough to be prudent
 When nothing tempts you to stray,
When without and within no voice of sin
 Is luring your soul away.
But it is only a negative virtue
 Until it is tried by fire,
And the life that is worth the honor of earth
 Is the one that resists desire.

By the cynic, the sad, and the fallen,
 Who have no strength for the strife,
The world's highway is cumbered today;
 They make up the items of life.
But the virtue that conquers passion,
 And the sorrow that hides in a smile,
It is these that are worth the homage of earth,
 For we find them but once in a while.

Ella Wheeler Wilcox.

Pain is the psychical adjunct of a protective reflec.—*C. S. Sherrington.*

Original Articles

INDIVIDUAL DISEASE

George Draper, M.D.
New York, N. Y.

One of the most difficult tasks a man can face is that of obtaining a good medical education. And each succeeding year renders the road harder. For it is not alone the knowledge of biology and the basic sciences of physics and chemistry which the medical neophyte must acquire; there is besides the obligation of knowing the Man within the patient.

In former days some understanding of this Man factor in disease was achieved. But the doctor then was unafraid of his intuitive faculty, thanked God for it, and was constantly forced to rely upon it unaided. The wise men of those times, however, were aware of its shortcomings and so of its dangers. Indeed the best testimony to this awareness was the eagerness with which they reached for the scientific methods held out to them with equal eagerness by the expanding laboratory. The striking reorientation in the attitude of doctors toward their patients since then is well known. It has been paralleled only by the conflicting feelings within the profession between the so-called "laboratory man" and "the clinician."

The almost uncanny power which some experienced physicians displayed in apprehending the imponderable personal identity of the individual, sick or well, could find no support in mathematics, physics, or chemistry. Furthermore, it often times went amiss and always seemed akin to magic. But perhaps the greatest shortcoming of the intuitive faculty was that it could not be transmitted from teacher to pupil. Within recent years, on the other hand, biological forces have been so clearly explained, and measured by the exact methods of science, that the validity of intuition has fallen prey to doubt.

The result of this situation is that nowadays most men in clinical medicine, even those highly endowed with the intuitive faculty, are increasingly disinclined to rely at all upon perceptive knowledge, and therefore use it as little as possible. More and more comes an insistent demand from the profession for laboratory answers to its patient's problems. And yet as abstract knowledge grows apace there would seem to be no good reason to discard the perceptive variety. Can it be said, that there is only one kind of knowledge or that knowledge is greater than wisdom where ailing human beings are concerned? Perceptive knowledge is indeed a different kind of knowledge from the abstract variety. But it can be used in an equally intellectual way. All clinicians know what a high percentage of disease begins in disturbance at the psycho-physiologic border. Furthermore, there still remains outside that zone of medicine now illuminated by science a vast shaded area through which intuition alone can project its directing ray.

How then shall a man set out to become a physician? The premedical training must begin early and follow an elaborate and arduous course. So far as I know, this has not been adequately exploited in the catalogues of university requirements. A general outline might be presented as follows:

Our future doctor appears first in the bassinette, having followed the advice of Dr. Holmes and carefully selected his parents. These should be persons of high intelligence and fully in accord with the simple creed of Abou Ben Adhem. But their interest in their fellows should not be sentimental nor altruistic. It is not good for people to receive much of the sort of help which flows from those sources. Rather should the parents, being entirely self-sufficient, hold to the philosophy of genial comradeship, possess a broad and tolerant attitude of mind, and a lively interest in and respect for the ideas and beliefs of others. Thus will the golden rule take early and natural root.

Throughout the ensuing periods of childhood and adolescence these wise parental agents of premedical training will exclude from their minds any plan for the boy's professional career. They will not be engaged in training him for medicine . . . but for life. The greatest obstacles which the youth will encounter on the road leading toward this great adventure are those set up arbitrarily by small-minded educators who do not know anything more about life and human beings than to believe that they are composed of compartments bounded by examination papers. This is the danger which our canny parental agents will have taught him to anticipate and

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surmount by having followed the plan of the Jesuit scholars: "Give us the child until he is six or seven," they have said, "and you can have him for the rest of his life." So during those early years, almost from the time the baby can lisp, and before he can comprehend their meaning, the parental voices will have been conveying the sounds of Shakespeare and of Sophocles, the Koran and the Bible, the poets and the lore of nature, to his ears. Later on the deep significance of these works will emerge from those pleasant and accustomed sounds: Shakespeare catching the boy's conscience by the play; the Bible directing his course, not in terms of religious dogma, but as the observations of wise men upon life. From the vantage point of such a beginning the boy looks out upon the fields of thought and future experience which lie before him ready for tillage. It is not a task which he faces, but a rare adventure. He is moving into life . . . meeting the men and women he has known in Macbeth, Midsummer Night's Dream, Hamlet, Oedipus Rex and Electra, and the life situations he has already lived through in Arabia, Egypt and Galilee. Then in the early months of college he one day views the rich tapestry of language and life and men which he has been led imperceptibly to possess and weave himself into; he decides to merge himself even more deeply into the picture and to become a physician.

Up to this point his education has been planned to fit him for life, from now on there must be added certain formulae necessary to his preparation for a special part in the drama. But the word "physician" has a very much wider significance today than ever before. In olden times the doctor was trained primarily to care directly for the sick. The gathering of information about the nature of disease was secondary, and his achievements in this field of investigation depended entirely upon the time and energy which he could bring to it after he had ministered to his patients. Today, however, a physician may be either a clinician who works with his hands and experience at the bedside of a patient, or he may be a physiological chemist who, sometimes without even seeing the sick man, serves him effectively from a distant laboratory.

The outgrowth of this situation however is that the doctor has tended no longer to view the sick man as a complete and unique total organism but rather as a collection of isolated laboratories. He has difficulty in accepting any more the ancient aphorism "'tis not the stomach but the man who's ill."

It may well be that the wide range of possible rational and intuitive interests for the modern physician which lies between these two extremes of usefulness, explains in part the difficulty of educating good doctors today. Indeed the more one contemplates the problem of medical education, the more does it appear to be one for philosophers rather than for chemists, physicists and bacteriologists.

When pathological tissue change has progressed within the range of delicacy of their tests, these disciplines may be able partially to explain and analyze disease mechanisms. But individual disease can only occur within a given unique individual human being. For the concept "disease" connotes a maladjustment between a particular living being and his special environment. Consequently the quality called "personal identity" by Samuel Butler, and simply "otherness" by D. H. Lawrence is a powerful ingredient of the reaction which we call disease.

One has only to consider for an instant the wide range of interests, already referred to, which are offered by clinical medicine, to appreciate that they are as diverse as are the qualities of men's minds. For our purpose in this discussion, however, it will perhaps promote clearness if we think only of two main functions of the psyche. One of these is the attribute of direct perceptive understanding or knowledge, which has been referred to as "intuition." This is the form of knowledge which the higher animals and primitive man have depended upon almost entirely for 60 million years. The other quality is rational or abstract knowledge, sometimes called Reason or Logic. Science belongs to the latter type and of it Schopenhauer says: "Speaking generally, to know rationally (wissen) means to have in the power of the mind, and capable of being reproduced at will, such judgments as have their sufficient ground of knowledge in something outside themselves, i. e., are true. "But," he also states that, "Reason is feminine in nature; it can only give after it has received. Of itself it has nothing but the empty form of its operation." While the philosopher does not remark it, one cannot escape the thought that that which Reason receives can be none other than the impregnating, energizing force of the

first kind of knowledge—perceptive knowledge—which is the fountainhead of the imaginative faculty. Thus it would seem that creative thinking is the psychological analogue of bisexual reproduction in the physical sphere.

That those two methods of satisfaction in the pursuit of knowledge are the possession, in some degree, of every normal human being is obvious. But the importance of one kind or the other to any given individual is variable and seems to be a matter of temperament or constitution. Some men are satisfied with perceptive or intuitive knowledge and by it negotiate successfully the problems which life brings to them. They may at times become impatient with the logicians. The other lot demands the form of rational knowledge, and incline to look with scepticism upon the mental operations of the former group. In discussing this matter Poincare says: "It is impossible to study the works of the great mathematicians . . . without noticing and distinguishing two opposite tendencies or rather two entirely different kinds of minds. . . . The one sort are above all preoccupied with logic. . . . The other are guided by intuition and at the first stroke make quick but sometimes precarious conquests like bold cavalrymen of the advance guard. . . . The two sorts of mind are equally necessary for the progress of science."

Clearly it is no easy task for educators to find means of providing instruction for two such diverse attitudes of mind; each one so deserving of the best chances for its own growth and flowering. But the problem is further complicated by the nature of the object itself . . . namely, clinical medicine. In considering this point, we may turn again with profit to Schopenhauer. In his discussion of the relation of spheres of concept, he points out that the sphere of one concept always has something in common with the sphere of another concept. If we apply this principle to our problem, it becomes evident that clinical medicine constitutes a sphere of concept dealing with the ailing human animal. The boundaries of this sphere of concept which we may assume to be infinite contains or extends into two other spheres of concept, which do not fill it now, and presumably never will. These are the spheres of Science and Nescience. It may render the relation of the three spheres of concept clearer to present them in the form of diagrams: (diagram showing the relation of the spheres of concept involving clinical medicine, science and nescience).

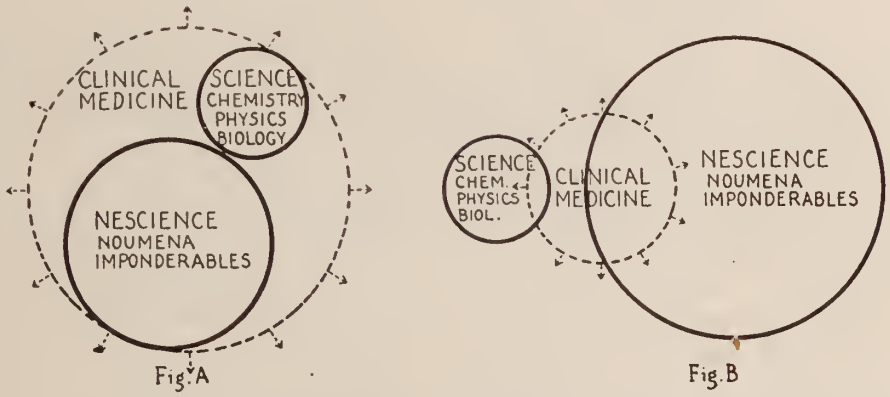


DIAGRAM SHOWING THE RELATION OF THE SPHERES OF CONCEPT INVOLVING CLINICAL MEDICINE, SCIENCE AND NESCIENCE

Figure "A" presents the situation in which the two related spheres are included within that of Clinical Medicine. Figure "B" shows the circumstance in which the sphere of Clinical Medicine extends into the two related spheres. The arrows indicate the infinite and unknown extent of the sphere of Clinical Medicine. The sphere of Science is the chief concern of that class of minds to which reference has just been made, whose essence demands the nutriment of abstract knowledge. In this sphere is to be found all material such as physics, chemistry and biology which can be assimilated in the form of abstract knowledge. It is the sphere in which Reason functions effectively. The sphere of Nescience, on the other hand, provides opportunities of satisfaction to minds of the other pattern, for the content of this sphere, composed of phantasy,

emotion and all noumena, can be apprehended only by Intuition, not explained by Reason. Furthermore, the knowledge gained in each of the two spheres must be expounded in quite different language. The content of the first is easily and directly transmitted from one mind to another in the precise speech of numbers. This we call proof. But the content of the second sphere can be the mysterious and magical possession of him alone who apprehends it. It enters his consciousness through the vari-colored filter of his individual quality and becomes instantly an integral part of his personal essence. So of two persons equally prepared by nature for the perceptive type of knowledge, each will gain a subtly different feeling about the same phenomenon. It follows, therefore, that one cannot say to the other with the incontrovertible finality of logic: "This is the fact, and here is the proof."

But, there is a language whereby the two individual subjective cognitions can be rendered mutually comprehensible. This is the language of symbolism. The vast accumulation of symbols which has come down to us from primitive times and the middle ages, is witness to what extent Man has relied upon the perceptive type of knowledge. This can only be transmitted in descriptive or symbolic form . . . that is by indirection. But the remarkable thing about the symbol is that it may often exert its effect and accomplish its purpose entirely below the level of conscious awareness. Doubtless it is for this reason that the poets and painters, musicians and sculptors, have been essential to mankind.

Words of course are symbols. Yet though it has been said that words are but the refined grunts of animals they are nevertheless the most powerful symbols known to man. One has only to read a nation's poetry and drama to realize the psychological significance of a language for its people. Jelliffe has written a valuable paper on this subject in which he concludes "The symbolism of the word is an index of humanity which no historian and no practical psychologist (and I would add no doctor) can fail to read and to apply."

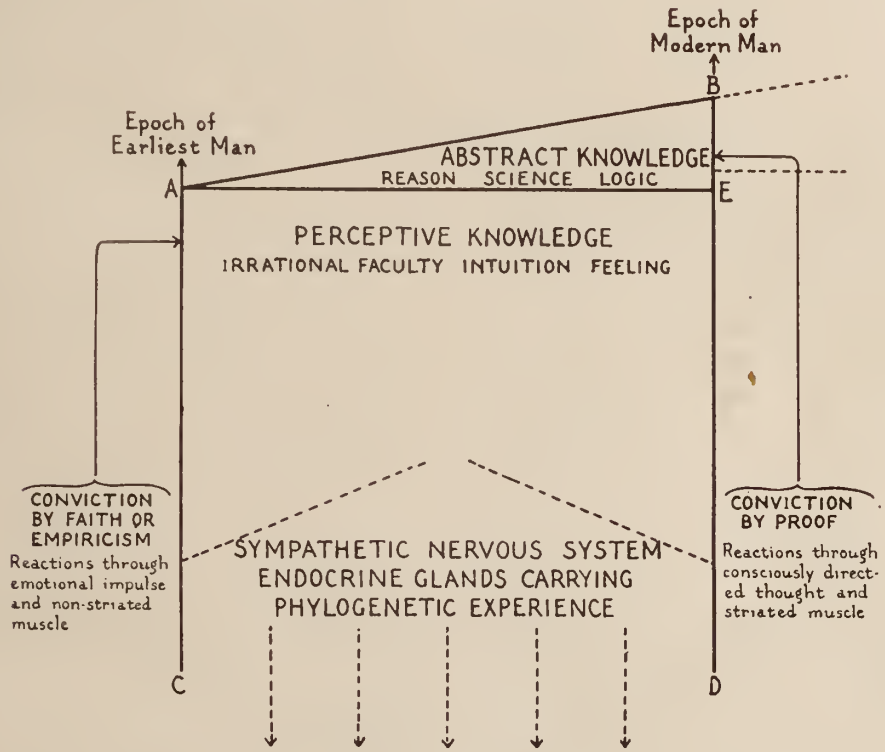
If then we accept words as possessing such force, the deep study of their connotations should be strongly emphasized in the student's premedical curriculum. Now the official requirement for English is 90 hours or 15 working days. The requirement in physics, chemistry and biology is 120 days. This disproportion is not a matter of importance for men who select their life work in pure science. But it is a matter of serious handicap for those who are to become practitioners of medicine. Obviously there are many men whose collateral interests are in arts and letters. But such interest is spontaneous in their case, not demanded, or even encouraged as an essential part of their medical equipment.

Notwithstanding, however, the firm reliance which Man, in company with other animals, has justifiably placed in the perceptive type of knowledge, he continues to seek for a kind of certainty which rightly or wrongly, he believes can be more surely found in Reason. So far as natural phenomena outside himself are concerned, one can readily understand this attitude. The obvious yet unexplained menaces to life and well-being which he has met and still will meet in his environment, lose much of their terrifying aspect when they are rationally explained. Furthermore, many of them have been rendered innocuous through the practical application of abstract knowledge. But the important factor in his environment which cannot be fully dealt with by the exercise of Reason alone, is himself. One does not have to seek far for an explanation of this serious failure or limitation in the efficiency of Reason. It is to be found in that irrational other side of himself, that submerged portion of his mind, where feeling and emotion reside, where perceptions are received, and whence imagination is distilled. But as indicated at the outset of this address this last statement is almost common knowledge to physicians.

In the progress of civilization, however, the demand for certainty continually increases. Furthermore, as any appetite grows well by what it feeds on, it has become stronger in proportion to the success with which, in the sense of abstract knowledge, the Unknown has been converted into the Known. The fodder for the certainty appetite has been supplied by Reason. Consequently the reasonable faculty, or its accepted expression —Science—has become the shibboleth of modern times. It follows naturally that Man, striving continually to turn imponderables into ponderables, and often successfully achieving the result, becomes increasingly unwilling to admit the existence of the former. He therefore grows more and more skeptical of perceptive knowledge, and empiricism. Clearly there is a strange lack of

logic in this trend of Man's thought; for, whether he will or no, the subcerebral machinery of the cortico thalamic mechanisms, autonomic nervous system, endocrine glands and nonstriated muscles, lying at the psycho-physiologic border, will always move swiftly to solve a vital problem before rational thought process can begin to formulate an explanation or direct a course of action. On the other hand, the ultimate solution of difficulties such as epidemic disease or poisoning by the venom of serpents, rests upon knowledge of the abstract type which satisfies Reason and is terms the causal relationship between a deep subconscious fear and peptic ulcer. Yet for many years doctors have been aware that there was a connection between what they have called "worry" and that particular malady. Furthermore, it is common experience that special diets and careful attention to acid-base balance will not surely cure the ulcer. From the illustrations just given it is apparent that situations may arise in the course of life which call for either one or the other, or both kinds of knowledge. Perhaps a diagram may help to clarify the notion

DIAGRAM SHOWING THE STRUCTURE OF THE KNOWLEDGE BUD



The irregular trapezoid A, B, C, D, represents the complete mind.
The quadrilateral area A, C, D, E, represents the unreasoning portion.

applied by it. Primitive man well knew the menace carried by these forces of nature, but his perceptive knowledge of them did not suffice to give him security. The magic processes devised by his imagination to combat them were inadequate. Even the gods failed him there. Yet in dealing with those diseases which arise from physiological faults flowing in turn from emotional maladjustment, Science is scarcely in better case. Reason is still unable to express in mathematical

of the two which together make up the whole knowledge content:

(Diagram showing the structure of the knowledge bud).

The irregular trapezoid A, B, C, D, represents the complete mind.

The quadrilateral area A, C, D, E, represents the unreasoning portion.

Its lower side is left open to indicate that its content extends infinitely deep in the phylogeny

of man. The triangle A, B, E, represents the rational part of the mind and its shape implies a gradual growth from the time of the earliest human forms. It may be assumed that both segments grow continually so that the relation of their proportionate value does not change in any marked degree.

If then we accept the situation so far presented, we find two main factors which render the physician's education complicated. On the one hand we have seen that medical students—homini sapienti—are of two sorts. The minds of one group are satisfied and function best in the realm of perceptive knowledge; the others are impelled with equal urgency by the need of abstract knowledge. On the other hand, we have seen that the sphere of concept "Clinical Medicine" contains or extends into two altogether different spheres of concept; the one—Science; the other—Nescience. It cannot be held that either type of mind is the only one out of which physicians can be made; nor does one hope to maintain that either one of the two different spheres is identical with that of Clinical Medicine. But the danger is that men incline to isolate themselves for work in the sphere wherein they feel most at home because their aptitudes are suited to it. This leads to tension sometimes between the two sorts of minds. The Intuitives grow impatient with the Reasoners; the latter are skeptical of the former. Whichever group controls the policy of medical education will tend to minimize the scholastic offerings which may be needed for the other.

Just now for example, the type of mind primarily responsive to abstract knowledge dominates medical education. For the development of research in Medicine and the allied sciences, this is clearly as it should be. But the question may well be raised whether the existing curricula —premedical and medical—emphasize sufficiently those attributes of training and experience which produce good doctors. At least three full years' attendance at an acceptable college of the arts and sciences must also lie behind the Aesculapean aspirant. But the emphasis is so strong upon the scientific subjects that many men are led to fill the three or four undergraduate years with a preponderance of those subjects which are germain alone to the sphere of Science or Abstract Knowledge. Indeed the requirements in what may perhaps be termed the humanities and cultures are unwisely low. No studies in psychology are called for, and among the courses arranged for the three premedical years there is scant emphasis upon those dealing with the history of human behavior or the growth of knowledge, or the significance of folk lore, or symbolism, magic, comparative religion and philosophy.

Ultimately it may turn out that different shades of emotional tone are produced by variations in the balance of positive and negative electrons and changes in the osmotic tension of cell envelopes. When this point is reached it will perforce have been through the power of Abstract Knowledge and Reason. Yet even then it cannot be said that the symbol or the vibrant word will not still influence physiological function by stirring an emotion. But in the meantime, and probably always, there must be physicians who can deal with those strange and unsuccessful adaptations of human beings to their several environments, which we call disease. Doctors of this sort cannot be produced by the present attitude in medical education which tends to focus the student's attention as closely as possible upon the sphere of concept called Science, and consequently to minimize the value of perceptive knowledge. Indeed it is not impossible that the extreme emphasis upon this attitude may lead the young doctor to doubt the validity of perceptive knowledge, and to question the existence of that other sphere of concept called Nescience. This is unfortunate for it cannot be denied that both spheres are essential parts of Clinical Medicine and that both types of knowledge are necessary to medical progress. Furthermore, he whose mind is more at home in the field of abstract knowledge is not necessarily lacking in Intuition; nor is the fine intuitive type of thinker devoid of Reason. Possibly in this circumstance lies the clue to the education of the physician.

The first step in the process is to bring back a mutual respect between the two types of mind; and the second is to urge the student to decide early whether his chosen career is to be dedicated ultimately to medical research or to the treatment of the sick. This choice will often be made unwittingly, determined inevitably by the pattern of his mind.

One might perhaps illustrate how the decision is made. Imagine Dr. Gray the anatomist standing beside Shakespeare and Goethe. Each

holds a human skull in his hand and each is asked to state what it means to him.

Dr. Gray says: "The skull, or superior expansion of the 'vertebral column' has been described as composed of four vertebrae, the elementary parts of which are specially modified in form and size, and almost immovably connected, for the reception of the brain and special organs of the senses. These vertebrae are the occipital, parietal, frontal and nasal. Descriptive anatomists, however, divide the skull into two parts: the Cranium and the Face."

There is the skull as such . . . it remains what it always has been and will be . . . a definite anatomical structure of accurately measurable size and composed of chemically known substances. Yet when the skull loomed before the Poet's eye its reality as an object was lost in a greater symbolic significance. Throughout Hamlet's apostrophe Yorick lived again—a vibrant integrated total organism. The speech is an excellent analysis of constitution.

"Let me see (takes the skull). Alas! Poor Yorick. I knew him, Horatio; a fellow of infinite jest, of most excellent fancy; he hath borne me on his back a thousand times; and now, how abhorred in my imagination it is! My gorge rises at it. Here hung those lips that I have kissed I know not how oft. Where be your gibes now? your gambols? your songs? your flashes of merriment that were wont to set the table on a roar, not one now, to mock your own grinning? Quite chapfallen?"

In the same way Goethe responded to the skull of Schiller with his classic poem. Therein he speaks of the "mysterious vessel giving out oracular words" and ends, "what more can man gain from life than to reveal to himself his godlike nature . . . see how he leaves the material things behind him and turns to spirit; see how jealously he guards that which is born of the spirit."

Thus for the reasoner in scientific method the skull was an antomical structure, a finite actuality. Both the Intuitives caught it as a fragment of totality symbolizing infinite possibility. One does not need a great stretch of imagination to perceive an analogy in the case of Man as an anatomical, or physiological specimen, and Man who lives within each patient. To the Reasoner, the medical researcher, the patient provides the opportunity for the study of disease; to the Intuitive, the Doctor, the sick man presents the possibilities implied in the maladjustments of a human being with his environment.

Now what is the formula in medical education which will give to each turn of mind the pabulum which will develop it to its fullest usefulness in medicine? Obviously each type will require a somewhat different sort of diet. He of the intuitive mind must scale the rugged mountain of fact and learn the ways of accurate observation, measurement and record. But the reasoner must travel, in order to apprehend by passing glance and hearing and other sensuous means the differing qualities of races, nationalities and individuals.

But travelling does not necessarily mean changing one's position in space. It is rather an attitude of mind seeking adventure. For it is possible to travel in books, in conversation, at the theater, and in the foreign countries of other men's thoughts. But travel he must. This was always a teaching of Paracelsus: "A doctor must be a traveler," he said, "because he must enquire of the world. Experiment is not sufficient. Experience must verify what can be accepted or not accepted. Knowledge is experience. . . . The Universities do not teach all things, so a doctor must seek out old wives, gypsies, sorcerers, wandering tribes, old robbers and such outlaws, and take lessons from them. We must seek ourselves, travel through the countries and experience much, and when we have experienced all sorts of things, we must hold fast that which is good."

There is no danger that anyone who has travelled, geographically speaking or by transport of the mind, will think of human beings as he would of a colony of ants. He will see only individuals. More than that he will be able to recognize innumerable expressions of personal identity. And so I believe that any medical curriculum is inadequate which fails, as its first requirement, to demand of the student as much knowledge of the whole individual human being as possible. For it is a biological inevitability that the individual Man should have his own individual disease.

33 East 68 Street.

ILLEGIBILITY

The height of illegibility—a doctor's prescription written with a postoffice pen in the rumble seat of a second-hand car.—Judge.

TREATMENT OF PNEUMONIA

Ellis B. Freilich, M.D.
George C. Coe, M.D.
CHICAGO

In spite of the many advances made in the specific treatment of lobar pneumonia, it is still the third most common cause of death in the United States registration area. The greatest progress in the present day knowledge of pneumonia is the understanding of its bacteriology. Although a number of different bacteria, such as the streptococcus, Friedlander bacillus, influenza bacillus, etc., may be causative agencies, the most important organisms in pneumonia are the several types of pneumococci, which together are responsible for about 95% of all cases. Diagnosis should be made, therefore, on a bacteriological rather than on an anatomical basis, for successful serum treatment is dependent upon accurate bacteriological type diagnosis.

A century ago pneumonia was fought by bleeding, blistering, purging and starvation. It was not unusual to bleed a patient 12 or 15 times, taking as much as 20 or 30 ounces of blood on each occasion. Mercury was given in sufficiently large amounts to cause sore gums, and tartar emetic was administered up to 30 grains per day.[1] "It is a great tribute to the stamina of our ancestors that so many survived this heroic treatment." In the middle of the 19th century, a reaction set in under the influence of Skoda of Vienna, and expectant treatment was begun. Since then a host of drugs have been introduced —quinine, veratrum, creosote, musk, digitalis, alcohol, etc., but the fact remains that no drug has been produced that has a specific action or materially alters the progress of the disease.

The acceptance of Type I and II specific antipneumococcic serum by the Council on Pharmacy and Chemistry of the American Medical Association indicates the tremendous strides that have been made in the specific serum therapy of pneumonia. Similar, but less dramatic, developments are being made with other types. The specific characteristic of the pneumococcus is attributed to the capsule which contains a complex carbohydrate bound with protein (the specific soluble substance), which, in turn, is responsible for the type specificity of the various 32 types of pneumococci.[1] This substance is antigenic, produces antibodies highly specific for the type of pneumococcus, and is responsible for the precipitins, agglutinins and mouse protective bodies in the homologous sera. It is the presence of capsules that endows pneumococci with virulence. Thus, Type III pneumococci have the largest natural capsules and produce the highest mortality, while pneumococci without capsules lack virulence and are readily ingested by phagocytes. Skin tests with the specific soluble substance are now being used to indicate when a patient has received sufficient serum. The appearance of a "wheal" at the site of inoculation is apparently associated with the appearance of homologous antibodies in the blood and indicates that recovery has begun, whereas a negative reaction, especially when serum is being administered, indicates a poor prognosis and that further intensive treatment is necessary.[2]

The value of serum therapy is judged by its effect on the symptoms, the rapid appearance of immune substances in the blood, the disappearance of bacteremia and by the lowering of the mortality. Typing must be done early in every case to determine the etiologic factor so that correct therapy can be instituted. By means of the Neufeld Quelling phenomena, in which the pneumococci are mixed with specific immune serum, a rapid and fairly easy test is available for typing. Positive results are indicated by the presence of agglutination plus swelling of the capsule.

Much of the recent success with Type I antipneumococcus serum may be attributed to the advances made in its production and concentration. By its correct and early use the mortality may be reduced to 10.5%.[3] Such treatment, if begun any time within the first five days, may be a life-saving measure, and while the mortality increases after the sixth day, its use nevertheless lowers the mortality in bacteremic cases with a more rapid termination of the disease and fewer complications than in the non-serum treated cases.[4] Therefore, specific serum should be used in every patient, however late seen. Routine blood cultures should be made, for most complications and deaths are associated with bacteremia, which may be prevented by adequate dosages of serum. In severe cases, the entire large required dose may be given at once, sometimes in a single intravenous drip, which dilutes the antibody, thus preventing reaction.[5] Administering the serum within the first 24 hours of onset may completely abort the disease, with the pulse and

temperature dropping to normal within 12 to 24 hours and has reduced the mortality to 5%. Once consolidation is complete, the circulation through the affected lobe is seriously impaired, and the chief effect of the serum is to confine the pneumococci to the pulmonary lesion and to prevent extension of the pathologic process. The striking subjective improvement results from the sudden elimination of the toxemia. While all the factors of this toxemia are not clearly understood, it is believed that the serum neutralizes the type-specific toxin as well as the type-specific polysaccharide.[6] Early serum treatment also prevents the spread of infection from one lobe to another and even limits the area of infection to the lobe primarily affected. Bacteremia is prevented, or, if already present, is quickly checked; apparently the penumococci are agglutinated by the specific serum and are filtered out of the blood as it passes through the liver and spleen.

While Type II serum is not as effective as that of Type I, it nevertheless has reduced the mortality and has decreased the incidence of bacteremia, but larger amounts are needed to establish an antibody balance. Blood cultures are particularly important in Type II pneumonia, for about 50% of cases evidence a bacteremia. Type II pneumococci were found to rank second or third in frequency as a cause of pneumonia with a mortality of 30 to 49% in large groups of patients who did not receive serum treatment, while 76% of those who received such treatment were practically symtom free by the end of the fifth day and 95% after the seventh day.[7]

The exact dosage of serum varies with each individual case, depending upon the presence or absence of bacteremia, the duration of the disease before instituting treatment, the extent of lung involvement, the presence of other complications, as pregnancy, and the type of pneumococcus involved. When treatment is begun before the fifth day of the disease in Type I pneumonia and blood cultures before treatment are negative and the pulmonary lesion is limited to a single lobe, a dose of 75,000 units is adequate. Under the same conditions but with more extensive pulmonary involvement, 150,000 units are necessary. With positive blood cultures, 150,000 units are adequate, provided the lesion is still limited to one lobe, but 200,000 to 250,000 units may be required, if the lesion extends before treatment is begun.[4] These total amounts of antibody may be ineffective if their administration is spread over two or more days. When treatment is begun after the fifth day of onset, much larger doses are needed. With Type II pneumonias larger doses are also indicated, and 100,000 to 150,000 units should be administered in the shortest possible time. In the presence of bacteremia an additional 200,000 units are needed. If treatment is begun after the fifth day, the serum is of little value except in non-bacteremic cases.[8]

With either type about 10,000 units should be given for the first dose, followed by 20,000 unit doses at two hour intervals until clinical improvement occurs or until strong agglutination has been obtained with the patient's blood against the homologous type-specific antigen. This latter, however, may not be true for Type II, in which bacteremia has been observed while agglutination occurred at the same time.[5] The serum at room temperature, not heated, should be administered intravenously very slowly. If, as a result of any injection, the temperature rises or the patient has a chill, the next dose should be no larger than the preceding one, and should be delayed until the chill subsides and the temperature is lowered again. When serum is repeated after a lapse of 72 hours, it is advisable to proceed very cautiously. As with the administration of any other kind of serum, adrenalin should be available for immediate use. Serums are commercially available for Type I and II, separately or combined. Since 50% of all lobar pneumonias in young adults is due to these two types of pneumococci, the use of a polyvalent serum even before typing is done is justifiable, and if the report is then positive for some specific type, the appropriate serum may then be continued, if available.

No serum has, as yet, been made available for Type III pneumococci, which seem to differ from others in their immunological properties. The most promising outlook with respect to specific treatment for this pneumococcus, which causes 11.8% of all pneumococcic pneumonias, is the enzyme of Avery, which destroys the specific polysaccharide and has shown distinctly curative properties in experimentally infected animals.[9] Sulfanilamide may be of value by its bacteriostatic effect, but its action is not without deleterious side-effects that must be watched for.

Pneumococcus Type V is responsible for about 7.5% of pneumococcus pneumonias, and by the correct usage of Type V antipneumococcus serum the mortality has been reduced from 20.8% to 7.4%. In bacteremic cases the mortality has been reduced from 60.4% to 23.5%.[10] In all cases the termination of the disease seems directly related to the administration of the specific serum. A good plan is to give initially 10,000 or 20,000 units followed at intervals of two hours by 20,000 units until the desired total—80,000 to 100,000 units, is reached, plus additional 60,000 to 100,000 units if bacteremia is present.[11]

Type VII pneumococcus has been found responsible for about 6.5% of adult cases, and the mortality has been reduced from 17.1% to 6.2% by the administration of Type VII antipneumococcus serum. In bacteremic cases the mortality was reduced from 40.5% to 25%.[12] This serum reduced the mortality and shortened the illness, even when it was administered on the fifth, sixth or seventh day of illness. For non-bacteremic cases 80,000 to 100,000 units are adequate, if given early, but twice this amount is needed for cases with bacteremia or where the pulmonary lesion extends before treatment is instituted.[13]

While detailed studies have not yet been made, specific antipneumococcic serum, alone and in combination, is now commercially available for Types IV, VI, VIII, and XIV pneumococci, and clinical experiments are being carried out with sera for Types IX, XVIII and XIX.[14] Immune serum, therefore, exists for types which together comprise about 65% of pneumococcic pneumonias. The importance of giving adequate amounts of serum until definite signs of improvement appear cannot be overemphasized. In children serum therapy is of no great importance because most of them get well anyway, sputum is hard to get, and intravenous manipulation is difficult, but advancing age brings an added load on the renal, hepatic and cardiovascular functions, so that this therapy is of greatest importance. Bacteremia at any age is serious, but in the older patient it is ominous.[15] Therefore blood cultures should be done in every case and appropriate serum therapy instituted, especially in older patients.

These therapeutic sera are produced by immunization of horses and possess, therefore, certain inherent, undesirable characteristics, such as low mouse protective titres necessitating concentration, anaphylactic reactions, serum sickness, etc. Recently rabbit serum has been developed and has been tried clinically in 22 patients (Types I, II, VII and VIII) of whom 12 had bacteremia; 21 recovered and one died of an aortic rupture unrelated to the pneumonia.[16] There was no evidence of any hypersensitivity. The unconcentrated type-specific rabbit serum seems to be as effective as the concentrated horse serum, and can be produced rapidly and easily at low cost and is easily administered without danger.

The significance of heterophilic antibodies in pneumonia is not clearly understood, but studies of these antibodies in the serum of patients convalescing from pneumonia and in controls suggest that they do not have any particular bearing on the course of the pneumococcus infection in man. There is only slight experimental and clinical evidence that the combined heterophilic antibody serum gives any immunity against Type III or the higher types of pneumococci, and there is no evidence that it produces a greater immunity for Types I and II infections than the ordinary antipneumococcus horse serum. Thoretically, it can be used for all pneumococcic infections regardless of type, so that typing becomes unnecessary. Serum having this advantage would be highly desirable, but because its superiority is unproved and because of the probable increase in allergic reactions, it is unwise to recommend its general use.[17]

Prophylactic vaccination of large groups of the population as a public health measure is still an experimental problem, but vaccine therapy may prove to be of value in the treatment of pneumonia. If used at all, vaccine should be administered early to prevent reactions, for a state of sensitization depends upon the presence of specific antibodies in the blood, which in acute infections do not develop for four or five days. At first vaccine gives a non-specific immunity while the curve of toxicity is still rising and later a specific effect to reenforce the immune bodies naturally produced by the disease.[18]

The therapeutic value of artificial pneumothorax is still doubtful. It is agreed, however, that to be effective it should be used in young adults with a unilateral lesion within 24 to 72 hours of onset before complete consolidation occurs. Its greatest value is for the relief of pleuritic pain, but frequently a dull, retrosternal pain

ensues as a result of the treatment which is equally troublesome. It is contraindicated in children. The clinical course is rarely changed in the presence of complications. The best technique is to collapse the lung as quickly as possible, using 1500 to 2400 cc. air at a single injection, if so much is required to overcome the negative pressure, and to keep the collapse for several days. Bacteremia largely determines the outcome and successful treatment depends on preventing or overcoming bacteremia.[19] This therapy is not without danger and its value awaits further study.

The use of diathermy is not based on experimentally or clinically controlled studies, and its early claims have not been realized. Its effect is mainly restricted to the chest wall, and while the temperature of the lung itself may be slightly raised, it does not follow that this is advantageous. There is no proof that the course of the disease is altered or the mortality reduced, and the absence of proper controls makes evaluation impossible.[20]

The most important therapeutic measure is rest, for in the final analysis, the patient himself must overcome the infection, even with the aid of serum, and everything must be done to conserve strength and allay fear. For this, morphine is of value, particularly to relieve pleuritic pain and to combat restlessness. It must be used with discretion, for in cases with extensive pulmonary involvement a marked anoxemia may result, because of the slowing of respiration and decrease in pulmonary ventilation. Early treatment should be directed towards combating the acute peripheral circulatory collapse. Because of a decreased venous flow, the blood pressure falls, a small pulse and tachycardia occur, anoxemia results and the symptoms of dyspnea, tachypnea and cyanosis arise. The longer this state of medical shock exists, the greater the difficulty in alleviating it and the higher the mortality.[21] Blood transfusions and intravenous saline, acacia or hypertonic glucose are, therefore, indicated early. Moderate daily doses of salt, five to eight grams, are advisable because of the diminution of serum chlorides. Thirst is frequently increased and administration of fluids is facilitated. Depending upon the water balance of the patient, 3000 cc. of fluid daily should be encouraged. While optochin and other quinine derivatives have been effective in animal experimentation, in man such large doses must be used that toxic effects, notably amblyopia, occur. The routine use of digitalis is not indicated, except in the presence of definite cardiac decompensation or auricular fibrillation. Usually most patients die from respiratory failure. Early intoxication rarely manifests itself by cardiac injury, so that circulatory insufficiency occurs late at a time when drugs are of little value. It is not advisable to use alcohol routinely, for it brings about a peripheral vasolidatation enhancing the possibility of peripheral vasomotor collapse. It may be used as a source of nourishment and energy in elderly patients who eat poorly and also in chronic alcoholics to prevent the onset of delirium tremens. Because abdominal distention is a common complication and medical management is often unsuccessful, rectal tube suction siphonage is recommended.[22] The apparatus is similar to that used for postoperative distensions by nasal catheter suction siphonage, except that a soft rectal tube is substituted for the Levin duodenal tube.

The main purpose of oxygen therapy is to prevent and to eliminate anoxemia, which, if neglected, produces and increases pulmonary edema, which, in turn, increases the anoxemia. Secondly, it meets the demand for increased oxygen resulting from increased metabolism, and thirdly, it decreases cardiac effort, thus preventing cardiovascular collapse. The true indication for oxygen is the first clinical evidence of a diminished oxygen tension in the tissues.[23] Because cyanosis does not appear until a 10% diminution in the oxygen saturation of the arterial blood has already taken place, and in patients with severe anemia it may not be demonstrable even when the oxygen tension is lowered 30 to 40%, other early signs, such as a rapid pulse out of proportion to the fever, anemia, a grayish color, rapid shallow respiration and irrationality, must be recognized. Enough oxygen must be given to raise the alveolar oxygen content to between 35 and 60%. Clinically, adequate oxygenation is gauged by a diminution of cyanosis and a decrease in pulse rate. While the oxygen chamber is the best method for its administration, it is expensive and difficult to maintain. This is also true for the oxygen tent. The face mask funnel is inefficient and administration by the subcutaneous or intravenous routes is still an experimental procedure. The nasal catheter is

simple, efficient and inexpensive. The addition of carbon dioxide to the oxygen (carbogen), in excess of one or two per cent, for routine use is not warranted, for it may measureably increase the volume of air breathed and aggravate the dyspnea.

It is apparent from the foreging that there is no sure cure for most cases. The routine treatment cannot be standardized because pneumonia is not a standard disease. The erratic and often unpredictable course of the disease renders judgment of therapeutic methods often fallacious. However, by the judicious use of modern therapeutic methods the mortality of this dreaded disease may be decreased. No single method is complete and the use of specific therapy does not release one from the necessity of utilizing every available symptomatic remedy. Fundamentally, proper nursing care is the bulwark of treatment despite all recent advances, and in the long run, a restful, quiet room, sufficient fresh air, a suitable diet, and proper care of the bowels will do much in preventing heart failure, vascular collapse and overwhelming toxemia.

Finally, there is an urgent need for the practitioner to become thoroughly familiar with the newer method of serum therapy. The keynote of the educational program for the physician should be speed in diagnosis and treatment; for the public, that a physician be called on the slightest suspicion of pneumonia so that proper treatment may be started early.

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THE EFFECT OF *L*-CEVITAMIC ACID ON INSOMNIA

(Preliminary Report)

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l-cevitamic (ascorbic) acid is essential in the metabolism of all tissues and for the proper growth and maturation of the connective tissues. Acute, rapid depletion of *l*-cevitamic acid (ascorbic acid) results in scurvy, the symptoms of which are weakness, spongy and bleeding gums and painful swellings in regions of joints. Subsistence, over a long period of time, on diets adequate, on the average, to prevent scurvy, but containing much less than the daily quantity required to maintain saturation, eventually results in secondary symptoms. Since vitamin C (ascorbic acid) is essential for intracellular metabolism, being associated with the oxidation and reduction processes of the body, it is evident that the secondary symptoms produced by long-continued subsistence on subminimal vitamin C diets will vary and depend upon which group of tissue cells are suffering from malfunctioning as a result of their depletion.

One may consume what is considered an adequate vitamin C diet and at the same time be depleted of vitamin C because of failure of its absorption from the digestive tract or by its failure of passage in adequate amounts from the blood into the tissue cells.

One of us (E. W. S.) observed upon himself that *l*-cevitamic (ascorbic) acid in adequate doses permitted him to enjoy adequate and restful

sleep. Following this observation we have administered *l*-cevitamic (ascorbic) acid to forty insane and twenty sane individuals, all of whom were suffering from insomnia. Other than the insomnia or insanity, as far as we could tell from a detailed history, physical and laboratory findings, they were in good health.

The sane patients with insomnia complained that they had difficulty in falling asleep upon retiring and that once they had fallen asleep shortly awakened again and were unable to fall asleep until just about the time to arise. The psychotic patients whom we have observed were restless, appeared never to sleep, being up and about both day and night, while others at best appear to sleep but a few hours out of the twenty-four.

All the subjects were given one or more one-gram doses of *l*-cevitamic (ascorbic) acid daily. Restful sleep was usually experienced by the sane group of individuals after the first to the third one-gram daily dose. Thirty of the psychotic individuals received restful, normal sleep after receiving from one to seven daily doses of one gram each. Several extremely disturbed patients required two one-gram doses daily, while one only slept normally after increases to three one-gram doses in one day. Administration of *l*-cevitamic (ascorbic) acid was discontinued immediately upon reports or observation of "apparently normal" sleep and not resumed until after the subjects against reported or were observed to be having difficulty in sleep. The duration of the beneficial effects of vitamin C were from a day to a week and more and varied with the individual.

We have administered *l*-cevitamic acid in from one to three grams daily to over 100 patients suffering from insomnia and other conditions without evidence of toxic effect. Overdosage produces sound sleep from which the patient may be aroused easily, followed by drowsiness during the day. This drowsiness, however, disappears within twenty-four hours after discontinuing the vitamin C. The dosages used in this investigation appear to permit a considerable margin of safety. Further studies on possible toxic effects of large amounts of cevitamic acids on animals and man will be reported later.

The best physician is most conscious of the limitations of his art.—*Benjamin Jowett.*

THE VALUE OF IRRADIATED ERGOSTEROL IN THE TREATMENT OF ACNE VULGARIS

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This investigation was undertaken to examine more intensively the observation of Doktorsky and Platt[1] that orally administered viosterol is of value in the treatment of acne vulgaris. They postulated that, since ultraviolet rays are reported to be of value in the treatment of acne,[2, 3, 4] the activation of ergosterol or other sterols in the skin by the rays might be the prime factor involved. They administered 20 drops of 250 D (viosterol) daily to thirty-five patients, making a count of the pustules before and one month after, and found a 70 to 80% improvement in 90% of cases and a 40 to 50% improvement in the remainder. Michael[5] reported that his results with vitamin D, given to eleven patients undergoing other forms of treatment, were not encouraging.

As in our previous study[6] on the incidence of acne vulgaris in the Chicago region, a count of the comedones, papules and pustules was made, and the severity of the disease was graded by the method of Bloch.[7] This method is tedious, but it is the only way one can quantitate improvement unless a complete cure or remission is obtained. Of course, no other form of treatment was instituted, except where it was indicated for medical reasons, such as anemia. However, if the patient had been using a lotion or ointment for six or eight months without improvement, it was not discontinued; this held only for the "Clinic Group" (vide infra).

A total of 210 patients was carefully studied. One hundred and fifty-five lived under standard conditions in an excellently regulated Children's Home, 83 being females and 72 males, ranging from 11 to 18 years of age. The remainder were patients, ranging from 11 to 24 years of age, who came to the Dermatology Clinic of Northwestern

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We desire to thank Dr. E. S. Denney, Medical Director of Mooseheart, Aurora, Illinois, and others of that Institution for cooperating with us in this investigation.

We desire to express our thanks to Dr. A. W. Stillians, Professor of Dermatology, for the advice given us during the course of this investigation.

University. Of the 210 patients examined and started on the treatment, 178 continued until dismissed or until other forms of therapy were instituted.

TREATMENT

A solution of activated ergosterol in oil was administered in *low dosage* (20,000—30,000 U. S. P. units daily), e. g., 100 to 150 drops of viosterol containing 10,000-U per gram, and in *high dosage,* 100,000 units daily of an especially potent solution e. g., 1 capsule containing 100,000 units. The high dosage was usually given after the low dosage had given no results, or when the case was unusually severe.

In patients to whom the high dosage was given, serum calcium determinations were made. These varied from 11.1 to 12.8 mgm. per cent after treatment. High dosage was accompanied by no detectable untoward effects, even after being administered as long as six months. No other treatment was instituted.

The results were classified as follows:

Marked improvement: From 70 to 100% decrease in papules and pustules.

Moderate improvement: From 30 to 70% decrease in papules and pustules.

Slight improvement: From 5 to 30% decrease in papules and pustules.

No improvement: Less than 5% decrease in lesions.

Patients were observed at least every three weeks during a period of from five to six months, actual counts of lesions being made. In the Children's Home group a re-check was made five months after cessation of treatment.

I. *The Children's Home Group*

Females: The 83 females varied in age from 11 to 18 years. The acne present in this group was chiefly acne simplex, pustular type, grade +++; there were two cases of acne indurata, and two cases of very severe acne simplex.

These patients were treated for five to six months. Some were irregular in taking viosterol. The total number treated systematically was 79. Only two patients received additional treatment, namely nine Lextron (Lilly) tablets daily for two months. One of these showed a moderate improvement, the other a slight improvement. The length of time required to show improvement varied from two weeks to two months, the average being one month.

Sixty-nine were on low dosage. Of these twelve showed a marked, thirty-two a moderate, seventeen a slight and seven no improvement. Their ages were as follows: Marked improvement, 13 (1), 14 (1), 15 (4), 16 (2), 17 (2), 18 (2); Moderate, 11 (1), 12 (6), 13 (3), 14 (7), 15 (1), 16 (6), 17 (5), 18 (3); Slight, 12 (2), 13 (4), 14 (3), 15 (5), 16 (1), 17 (1), 18 (1); No improvement, 13 (1), 14 3), 16 (2), 18 (1). One patient, age 17, showed a complete remission (cure) after three weeks of low dosage treatment. Low dosage was continued at the patient's request with no recurrence of the acne after six months. The original acne was moderately severe (grade +++).

Ten were on high dosage. Of these three showed a marked, four a moderate, two a slight and one no improvement. The ages were as follows: Marked, 17 (2), 16 (1); Moderate, 16 (1), and 17 (3); Slight, 15 (1), 16 (1); No improvement, 17 (1). Slight recurrences were seen from time to time in about ten per cent of the females, chiefly at the menstrual periods.

Males: The 72 males varied in age from 12 to 18 years. The acne, as was the case in the females, was chiefly acne simplex with pustules, grade +++. There were three cases of acne indurata and eleven cases of very severe acne simplex.

They were treated for five to six months. Of the 72 boys, three were definitely uncooperative, took viosterol irregularly, and were very careless in hygiene. The number treated systematically was 69.

Fifty-four were on low dosage. Of these ten showed a marked, 18 a moderate, 15 a slight and ten no improvement. Their ages were as follows: Marked improvement, 14 (2), 15 (2), 16 (2), and 17 (4); Moderate improvement, 13 (2), 14 (4), 15 (4), 16 (7), 17 (1); Slight, 12 (1), 14 (2), 15 (5), 16 (4), 17 (3); No improvement, 14 (1), 15 (4), 16 (2), 17 (1), and 18 (2). One patient aged 18, with moderately severe acne (grade +++) showed a complete remission (cure) after one month of low dosage. His face was still clear after five months of observation with no treatment.

Fifteen were on high dosage. Of these five showed a marked, three a moderate, six a slight, and one no improvement. The ages were as follows: Marked improvement, 16 (1), 18 (4); Moderate, 13 (1), and 15 (2); Slight, 15 (1), 16 (1), 17 (2), 18 (1), and 19 (1); No im-

provement, 15 (1). Periodic recurrences while on treatment were seen in approximately five per cent of the males treated.

II. *Dermatology Clinic Patients*

Fifty-five patients with acne were seen in the clinic; 39 were females, 16 males.

Females: The females varied in age from 11 to 24 years (one patient was 30 years of age). The type of acne was chiefly acne simplex, pustular type, grade +++. There were four cases with acne indurata and six with very severe acne simplex.

Of the females only 20 out of the 39 returned for treatment. Fourteen were kept on low dosage. Two of this number were also given ferrous sulfate, grains six, daily, for several months. One of these showed a marked, the other a moderate improvement. Of the total fourteen, two showed a marked, eight a moderate, two a slight, and two no improvement. Their ages were 21, 15, 13, 15, 19, 19, 13, 17, 19, 13, 20, 33, 19, 21, respectively. Of the six receiving high dosage four showed a marked, one a moderate and one a slight improvement. Their ages were 15, 15, 21, 17, 13, and 24, respectively. From two to six weeks were required to obtain improvement, although the cases were treated from one to eight months.

Males: The 16 males varied in age from 13 to 22 years. There were two cases with acne indurata; the others were acne simplex grade +++.

Only ten of the males were treated, since six made only one visit to the clinic. All of them were started on low dosage, six of these were later put on high dosage. Of those receiving low dosage, one showed a marked, one a moderate, one a slight, and one no improvement. Their ages were 17, 16, 19 and 14 respectively. Of the six on high dosage, one showed a marked, two a moderate, two a slight, and one no improvement. Their ages were 17, 18, 18, 22, 16, and 19 respectively. The time required to observe improvement varied from three weeks to two months, average one month. They were treated for from one to three months with the exception of one patient who was treated for six months.

None of the patients became worse while under treatment. A summary of the results of treatment with viosterol is shown in table 1.

Follow-up on the Children's Home Group:

One hundred and three of the Children's Home children with acne were seen five months after the viosterol treatment had been discontinued. They were seen in November at a time when recurrences are often noted, after the usual summer remission.

Fifty-five females were seen. Eighteen, or 32.7%, showed improvement of one grade in the classification of Bloch when the skin condition was compared with that found one year ago, i. e., before viosterol was administered. Three, or 3.8%, were worse by one grade, and the remaining thirty-five, or 63.5%, remained the same or were improved by less than one grade.

Of the 48 males, twenty-two, or 45.8%, were improved by one grade over last year; none was worse and twenty-six, or 54.2%, showed less than one grade of improvement or remained the same.

Since in one year's time without treatment such an improvement is not usually observed, the conditions of living, diet, etc., being unchanged, one is led to believe that the viosterol is to a large extent responsible for the improvement observed, under treatment, and that the beneficial effects obtained seem to be retained to some extent for a period of five months after cessation of treatment.

It is worthy of noting that one patient with an acneform eruption due to bromides was relieved by 100,000 units of viosterol given every third day. A discontinuance of the therapy resulted in the return of the eruption in one week. This dose did not cause an elevation of blood calcium in this patient; a larger dose did.

Discussion. The results reported are definitely objective because actual counts of the lesions were made before and after treatment. In regard to the interpretation of the therapeutic results early in the work a factor appeared which caused considerable apprehension. Within a few weeks after the initiation of treatment in the Children's Home group many girls reported voluntarily for treatment. Throughout the study the girls were more interested and "acne conscious" than the boys, and kept their faces cleaner. This led us to believe that the girls would show more improvement than the boys. A study of table 1, however, shows that an appreciable sex difference in the response to the treatment does not exist, except in the group "mod-

erately" improved. Twenty-three per cent of the males and 20 per cent of the females were markedly improved. Forty-five per cent of the females were "moderately" improved, whereas only 3 per cent of the males were moderately improved.

Another possibility that has to be considered in the interpretation of the therapeutic results, is the matter of spontaneous partial remissions. The observations, which in most instances extended over a period of six weeks, tend to invalidate this possibility, since we do not believe that spontaneous partial remissions occur in the age group observed in the Children's Home to the extent manifested by those who showed "marked" improvement.

It should be emphasized that the maximum improvement was observed in most cases not after a few weeks, but after from one to five months of treatment. Further, only the papulo-pustular lesions were decreased or disappeared; comedones remained unless removed mechanically. Seborrhoea tended to persist. This leads us to suspect that vitamin D in adequate doses in some way increases the resistance of the skin to infection, and suggests a problem for future study. The observations of Luithen,[8] Waterman,[9] and Gans[10] indicate that calcium and potassium in the skin may be altered in skin diseases and may play an important role in the physiology of the skin. Disturbances related to calcium and phosphorus metabolism are most manifest during periods of rapid growth.

TABLE 1

	Change on Low Dosage					Change on High Dosage					Total Low and High Dosage				
Total No. Treated	No.	Marked	Moderate	Slight	None	No.	Marked	Moderate	Slight	None	No.	Marked	Moderate	Slight	None
Clinic Patients—															
Males: 10	10	1	1	1	1	6	1	2	2	1	10	2	3	3	2
Females: 20	14	2	8	2	2	6	4	1	1	0	20	6	9	3	2
Children's Home—															
Males: 69	54	11	18	15	10	15	5	3	6	1	69	16	21	21	11
Females: 79	69	13	32	17	7	10	3	4	2	1	79	16	36	19	8
Total No.	147	27	59	35	20	37	13	10	11	3	178	40	69	46	23
Per cent.		18	40	23	13		35	26	30	8		22	38	26	13

CONCLUSIONS

A definite and practical improvement may be obtained by the daily administration of 20,000-30,000 units of irradiated ergosterol in about 20 per cent of patients with acne vulgario after from two to eight weeks. To maintain the improvement it is necessary, in most cases, to continue treatment over a longer period of time. Approximately 30 per cent of those who fail to manifest a practical improvement on the above dosage will do so on 100,000 units daily. *This high dosage, when used, should be accompanied by serum calcium determinations.* Our results indicate that irradiated ergosterol is by no means a specific in the treatment of acne. It does, however, have definite merit and should be used to augment other forms of treatment, such as the administration of a well balanced, high iron and high vitamin diet, the correction of constipation, skin hygiene, ultra-violet light, x-ray, etc.

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THE MANAGEMENT OF PREGNANCY AND LABOR IN THE PRESENCE OF HEART DISEASE

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Pregnancy and diseases of the heart are both conditions with which the physician in general practice as well as the internist and obstetrician have constantly to deal. Inasmuch as both are frequently encountered, it is not strange that they may be met with in the same individual. The obstetrician whose work lies in the large teaching hospital or in an institution in which the staff organization affords consultation in all fields, finds his task greatly lightened. Many women with cardiac disease must be cared for by their own physicians and I shall try to make a

few suggestions which may be of use under these circumstances.

First, we should understand clearly that the mere presence of a valvular murmur is, of itself, no indication for special management. A woman with a murmur, whose heart is perfectly compensated, and who gives no history of recent decompensation, and who is carrying on the usual activities which make up the life of the married woman, will, in the great majority of cases, go through pregnancy and labor without trouble. One of the cases which impressed me most strongly as an interne was that of a man with a loud mitral murmur, a marked hypertrophy of the heart, and who for years had pursued the laborious life of a piano-mover. Quite recently I cared for a young primipara who had a well compensated mitral lesion and who passed through pregnancy and labor uneventfully. When an expectant mother is seen in early pregnancy, it is far more important to elicit facts concerning possible decompensation in the past, and of paramount importance to detect the evidence of decompensation when she is seen. Sir James Mackenzie points out that functional murmurs may be found when no cardiac disease is present and that serious decompensation, sometimes even with insufficiency of a cardiac valve, may be present without a murmur. As murmurs are often found when serious heart disease exists, they must be taken into consideration when they are heard, but not to the exclusion of other and more conclusive evidences of cardiac insufficiency. Dyspnea, cyanosis, edema of the ankles and perhaps moist rales of the bases of the lungs are evidences of failure on the part of the heart to maintain the circulation and, as such, mean far more than the presence of a murmur. Serious cardiac disturbance may be seen when no murmur is found.

The mere fact of pregnancy increases materially the work of the heart. Stander and his associates measured the cardiac output in dogs and in women during pregnancy. They found that the amount of work done by the heart increased from the fourth month of pregnancy until at term about 50% more work was done than in the non-pregnant state. The work of the heart reaches the normal about three weeks after delivery. It is evident, therefore, that any appearance of cardiac insufficiency in early pregnancy should be carefully considered, not only in the light of conditions when decompensation is first found but also in view of the fact that the demands upon the heart will increase as pregnancy progresses.

Of the cases of heart disease found in pregnancy the overwhelming majority are rheumatic in origin. Lesions of the mitral valve are most frequently found. Aortic lesions are very infrequent. Sir James Mackenzie reports that he saw but two.

Having settled the question as to the presence of a heart lesion, the course to pursue during pregnancy must be determined. If perfect compensation is present and the patient has been able to carry on the ordinary activities of women of her age for the past few years, no treatment is needed, but she must be cautioned against too great exertion, remembering that a normal pregnancy calls for an increasing amount of work from the heart as it proceeds. Periods of rest are advisable, but no drug therapy need be considered. Careful watch must be kept for the appearance of any early sign of circulatory failure in any part of the body. These will call at once for further care. In cases which are not so favorable, women who do well when relieved of any exertion but who show signs of decompensation upon any increased activity, the problem is more serious. Such women, if seen before pregnancy begins, should be advised against child-bearing. Prolonged rest, the occasional use of digitalis and the avoidance of muscular effort caused by constipation are important. It is essential that sufficient sleep be obtained, and it may be necessary to use sedatives. If the milder drugs do not suffice, it may be necessary to use codeine as the pregnancy progresses toward its end. The cooperation of a cardiologist is of the greatest assistance when it can be had. If the evidences of decompensation disappear, the pregnancy may be allowed to continue under the most careful observation and may be terminated at any time should decompensation recur. Such a patient during the past year was for the second time carried through pregnancy; most careful observation, restriction of activity and occasional digitalization being needed.

Decompensation, in the first trimester particularly, which does not respond at once to treatment, demands termination of pregnancy. This indication may be emphasized if there have been periods of decompensation before

pregnancy. Decompensation later, as viability is approached, may be managed by medical means in the interest of the child, but in no case should the mother's safety be sacrificed. When pregnancy must be terminated, and if the cardiac lesion is of such a character that pregnancy can never be safely attempted, I believe that sterilization should be done at the same time. It does not seem fair to the woman to subject her repeatedly to the hazards of pregnancy and of surgical intervention, nor should the obstetrician be asked to do repeated therapeutic abortion upon the same woman. When the uterus is large enough to rise above symphysis, hysterotomy under local anesthesia is simple and satisfactory. Preliminary use of morphine aids materially. The more recent forms of intravenous and spinal anesthesia I prefer not to use in women with decompensated heart disease. When local anesthesia does not suffice, drop ether appears to be the best inhalation anesthesia. Our routine inhalation anesthesic for gynecologic and obstetric operative work is ethylene-oxygen, but in dealing with pregnant cardiopaths we still prefer ether. Simple evacuation of the uterus from below solves the problem so far as the existing pregnancy is concerned, but the likelihood of further trouble in later pregnancies remains. Vaginal hysterotomy may be of use when the pregnancy is not too far advanced and when the woman is a multigravida. As many heart cases are found in women pregnant for the first time, vaginal sterilization does not have a frequent application. Hysterotomy in the first trimester may be done in a primipara, but sterilization, involving bringing down the corpus through an anterior vaginal celiotomy wound, would be difficult, time-consuming and more traumatic than abdominal approach. Later interruptions should be done abdominally.

As the end of pregnancy approaches, the management of the delivery must be considered. It is sometimes suggested that labor be induced before term in order to have a smaller baby. To the physician of no obstetrical experience this may appear to be a happy solution. I do not agree with this and believe that premature induction is, in most cases, unwise. Induction performed before term is apt to result in an unsatisfactory type of labor and not infrequently fails. The woman is subjected to the physical and nervous strain caused by hours of pain which accomplish nothing. The results of induction at term, frequently with the cervix partially effaced and perhaps open one to two centimeters, are very satisfactory. Under smiliar conditions induction might be considered for the cardiopath. I do not, therefore, induce labor before term as a means of dealing with heart disease in pregnancy. A certain proportion of our cardiac cases, as Mackenzie points out, will go into labor before term.

Fortunately, many women with cardiac disease have easy labor. The explanation for this is not apparent, but it occurs often enough to attract attention. As the end of pregnancy approaches, the circulation must be brought into as good condition as possible, much rest and perhaps the use of digitalis being needed. Sleep is essential and must be had, even though opiates are needed.

As to agents for the relief of pain in labor, my opinion is quite definite. Morphine is by all means the most valuable agent and should be employed liberally. Mental and physical strain should be lessened to the greatest possible degree. Scopolamine may be used to supplement morphine, but if used the amount should be small. Morphine is the drug upon which we depend. Although in the past four years we have had an extensive experience with pentobarbital sodium as an obstetric analgesic we feel very strongly that it has no place in the management of labor in cardiopaths. Many women under the influence of the barbiturates are very quiet but this is not always the case. Should the cardiac patient be one who struggles and moves actively about while under the influence of the drug she will place far more strain upon her heart than would be the case if morphine were used. Amnesia may be far better attained by the use of the barbiturates and scopolamine, but in these cases amnesia is of less importance than the diminution of physical and nervous strain.

Labor should proceed with no interference other than the rupture of the membrances as dilatation becomes complete. No voluntary effort should be allowed. Multiparae, whose birth-canals offer little resistance, will sometimes deliver spontaneously without bearing down. Primiparae should be allowed to progress until the head comes as low as it will. Interference with the head at a high level should be avoided if possible but voluntary effort must be avoided. When

it becomes apparent that further progress is not to be expected and that interference is needed, the problem of anesthesia arises. While I am very fond of ethylene-oxygen for operative obstetrics with the exception of version, manual rotation and breech extraction, I much prefer, in doing any form of operative delivery upon a woman with heart disease, to use ether. Forceps delivery should replace all of the second stage which is not accomplished by the unaided force of the uterine contractions. In many cases a simple outlet operation is all that is needed. Mid-forceps may usually be done without serious incident but high forceps is a serious form of intervention. If the head is still high, a version under a complete ether anesthesia is usually best unless some definite contraindication exists. As interference in cardiac cases should not be long delayed this will not often be so.

Immediately after delivery is complete the effect of too sudden a change in intra-abdominal pressure should be guarded against by placing a sand-bag upon the abdomen. This may remain 20 to 30 minutes. Treatment after delivery should be along cardiologic lines. Morphine may be immediately needed for rest.

Cesarean section should not be a frequent method of delivery in heart cases. For women whose hearts are well compensated it is not necessary, and for those whose cardiac function is less than normal it is often unwise. The old classical section, still in wide use in this country, it seems to me, is an exceedingly poor way to deliver a woman with a damaged heart. The physician who quickly grasps at abdominal delivery as the solution of cardiac problems in his obstetric work forgets, especially if the classical section is done, that every woman upon whom a laparotomy is done must pass through a convalescence, which, in case a classical section is done, is often harder upon the patient than labor would have been. The distension and vomiting which is so often a part of the recovery from this operation, makes heavy demands upon the physical strength of the woman. If Cesarean section is to be done it should be of the low cervical type and local anesthesia is usually best. In the past five years I have made use of abdominal delivery but twice in cardiac cases. One of these was a primipara of thirty-one. Her heart had been kept in compensation throughout pregnancy by constant care and the assistance of one of our best internists at Northwestern. Any notable activity was at once followed by signs of circulatory failure. At term she had a large baby, the head quite unengaged and lying in a posterior position. With the posterior position, the moderate cephalo-pelvic disproportion and an elongated and undilated cervix, it was probable that she would have a long and tedious labor. As decompensation had been maintained with difficulty my medical confrere felt that a labor, other than a very easy one, would be unsafe. A low cervical Cesarean section was done under local anesthesia aided by morphine. The convalescence was uneventful.

The second case was that of a woman of thirty-eight, a para III. Previous pregnancies and labors had been uneventful. At the fifth month of pregnancy she had an attack of coronary disease. Immediate consultation with a good internist was had, under whose observation she remained for the duration of the pregnancy. It was necessary for her to remain in bed, any physical activity being followed by serious circulatory symptoms. Various attempts were made to begin a little exercise but always unsuccessfully. As it had been impossible to get her to withstand any physical work the internist was firm in insisting that the exertion of labor should be obviated. She was delivered by Cesarean section, using local anesthesia. Sterilization was also done.

Occasionally Cesarean section may be useful in carefully considered cases. It should not be frequently used. The great majority of cardiac cases can be conducted through pregnancy and labor by judicious medical management and by careful and conservative obstetrics at the time of labor. In these cases, as in some other types of obstetric difficulty, Cesarean section is used too often. A careful observance of obstetric and medical principles will, in most cases, lead to a successful outcome.

ZERO POINT

"Oh, I know a few things!" exclaimed the haughty senior.

"Well, you haven't anything on me," retorted the freshman confidently: "I guess I know as few things as anybody."

ASK YOUR DENTIST

Joe (reading death statistics): "Say, Phil, do you know that every time I breathe a man dies?"

Phil: "Then why don't you use a mouth wash?"

—*Ohio Sundial.*

TUBERCULIN TESTS IN A COLLEGE GROUP

Arthur S. Webb, M. D.
CHICAGO

There has been considerable work done since 1920 in surveying college populations for tuberculosis and attempting to educate this group of people to the necessity for such surveys. College students are presumably better than the average in intelligence and opportunities and in reaching this group more can be accomplished as it is through such people that this program can best be spread. It is also true that the college age group are at an age when tuberculosis is most likely to become active. We know that through positive reactors to the skin test we can discover often the open case and also we can protect the tuberculin sensitive individual from a possible break down with active tuberculosis. Yet when we attempt to promote such a program we often meet with opposition. However, this opposition is becoming less and less and more schools of higher learning are inaugurating tuberculin testing of their students.

We know that tuberculosis found early and properly treated can be arrested, and also contacts protected from infection. Also we know that early minimal infiltrations can only be found by the x-ray. Early infiltrations are asymptomatic and give no physical findings. They are usually subclavicular and later extend toward the apex. However by the time the apex is reached, moisture can usually be elicited, and the case is definite. The object of such surveys should be to find the cases early. In the past we waited for tuberculosis to show itself before doing anything. Today we have the means at hand to find the case before it becomes clinically evident. The work of Stiehm[1] at the University of Wisconsin showed that from the years 1919 to 1933 with no definite program there were ten cases of pulmonary tuberculosis found each year on the average while after an adequate testing and x-ray program was begun the percentage of cases found showed an increase of 430% or 43 cases per year. Surely this is good preventive medicine.

The pioneer work in this field began under Dr. J. A. Meyers[2] of Minnesota in 1920; although as early as 1827 educators realized the value of guarding their students health. The *Boston Medical Intelligencer*[3] of September 25, 1827, in commenting on the exercise program at Williams College said, "We may hope that our students will no longer, as in former years, leave college with emaciated frames and pallid countenances through want of proper exercise." In 1865 Dr. Edward Hitchcock of Amherst inaugurated a health program that was quite modern in scope. He has been quoted as saying, in giving advice to students, "Trust in God and keep your bowels open."

Medical work in most colleges and universities is a perfunctory service, concerned with rather superficial examination and few preventive measures are taken, although such schools as Minnesota, Wisconsin, Stanford, Yale and Pennsylvania have complete health programs. The college student should be prepared physically as well as mentally for his entrance into business or profession. The tuberculin test and the x-ray should be included in all college health programs and positive reactors should be followed throughout the entire course. Long & Seibert[4] have called attention to the fact that it is in the college years that the last opportunity occurs for mass measures to be taken for identification of the disease. "The colleges constitute one of the great filters through which a section of the youth of the nation passes. Seldom after the college age is it so easy to institute mass measures for prevention of the disease." In the state of Illinois relatively little has been done in skin testing the college age group. The problem was brought forcibly to my attention by having a patient brought to me with tuberculosis. He was a three letter man from a prominent school. His disease was very far advanced and he soon passed away. The source of infection was his roommate in school, who still lives. This school has a good health program but has no definite tuberculosis program. With this case in mind I approached Dr. Welsh, Director of Medical Service, Wheaton College and interested him in offering the test at Wheaton. This being the first time at this institution the test was made voluntary. Two days were spent in testing. The first day 1 to 1,000 Old Tuberculin was used, and 589 were tested and a percentage of 38.03 positives were found. The second day 352 were tested with P. P. D. first strength and 24.07% found to be positive. As it was too near the end of the school year student activities prevented the retesting of this group with second strength and while it would

have been more complete if this could have been done the results of this testing produced some interesting figures.

The total group figures were as follows:

Age	No. Tested	No. Positive	Percentage Positive
Before 15	28	4	14.2
15 to 20	328	87	26.5
20 to 30	532	176	33
30 to 40	48	26	54
40 to 50	2	0	..
50 to 60	3	1	33⅓
Totals	941	294	31.24

The Roentgenological findings showed:

248 x-rayed

51 Definite childhood type infections or 20.56% of those filmed

24 Gohn Tubercles

169 With Calcified Hilium Nodes

6 Reinfection or adult type, healed. (3 admitted previous diagnosis)

4 Evidence of pleural adhesions

In a group such as this we could expect to find at least several active cases—but fortunately there were none.

This program should now be carried on each year, hereafter testing the freshman and retesting the negative reactors. The 6 reinfected healed cases should have annual roentgenograms or more frequent if indicated at least until they are twenty-five. It is only by such stringent measures that we can hope to diagnose tuberculosis early enough.

Long and Seibert[4] in their article pointed out the geographical variation in positive reactions. Attention was also called to this by Stiehm.[1] The figures for Wheaton College, which as most schools with a religious background has students from all states and many foreign countries, were as follows:

Eastern States	37.3%
Central States	25.7%
Western States	36.4%
Foreign Countries	47.3%
Canada	22.2%

This variation can presumably be explained; in the East by density of population, in the West by migration in past years of many tuberculous individuals. The central states being less congested, having the least.

Variation according to sex was also noted.

Percentage Positive in males, 36.91.

Percentage Positive in females, 26.88.

This corresponds with figures from many sources. The greater incidence being in the male sex. In figuring these percentages the entire group was used from age 15 to 60 and although the figures showed a greater percentage in males this is not always true. At Oregon State[4] the sexes of same age showed no difference in percentage. At Pennsylvania and Yale the age of women entering is older than the men and they show a higher per cent positive reaction.

While much has been done in the colleges and universities of the country in early diagnosis which if translated only into terms of money would mean thousands of dollars saved but which also has no doubt saved many lives, we still fall short of an adequate program. We should not cease until the tuberculin testing and x-raying of students is routine and universal. Dr. C. E. Shepard[5] reports in a survey by the American Youth Commission, completed in 1936-1937 that 50 colleges have definite tuberculosis programs and 40 are tuberculin testing their entire student body. To use the figures of L. H. Ferguson we know that an average of 6 cases of adult tuberculosis are found each year, per 1,000 students. On the basis of 1,000,000 students this would mean 6,000 cases of tuberculosis in serious form. When we think of these cases, if undiscovered or discovered too late and the number of individuals who are in contact with them and who would be potential cases, we can readily see the value of college group testing.

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55 East Washington.

Marriages

Samuel Parnell Durr to Miss Dorothy Harker, both of Rock Island, Ill., April 23.

Edmund S. Lockhart, Nokomis, Ill., to Miss Wilma V. Showers Reiser of East St. Louis, March 1.

John B. Roth, Morris, Ill., to Miss Sarah Lee Smith of Henderson, Ky., in Chicago, March 17.

John L. Schilsky, Springfield, Ill., to Miss Lois Stahr of Louisville, Ky., March 26.

Personals

Dr. Quitman U. Newell, St. Louis, discusssed "Prolapsus Uteri" before the Adams County Medical Society in Quincy, May 9.

The Chicago Roentgen Society was addressed May 12, among others, by Drs. Isador S. Trostler on "A Slipped Sacro-Iliac Joint" and Louis J. Tint, "X-Ray Findings in Sciatica."

Dr. Melvin S. Henderson, Rochester, Minn., addressed the annual meeting of the Chicago Orthopaedic Society, June 10, on "Use of Bone Grafts in Ununited Fractures of the Neck of the Femur" and Dr. Samuel Kleinberg, New York, "Slipping of the Femoral Capital Epiphysis."

Dr. George W. Hall, Chicago, addressed the Peoria City Medical Society in Peoria April 19 on "The Relationship Between the Physical and Psychic Disturbances of the Patient." Dr. Harry E. Mock, Chicago, addressed the society April 5 on "Management of Craniocerebral Injuries." Dr. Willis S. Lemon, Rochester, Minn., discussed "The Development and Metamorphosis of the Primary Tubercle" before a recent meeting.

Dr. Ronald R. Greene has received the Joseph A. Capps Prize of $500 for 1937 for his work on "Experimental Production of Intersexuality in the Female Rat." Founded by the late Dr. Edwin R. LeCount, the award is made annually by the Institute of Medicine of Chicago for the most meritorious investigation in medicine by a graduate of a recognized medical school in Chicago within two years after the completion of an internship or of one year in laboratory work. Dr. Greene graduated at Northwestern University Medical School, Chicago, in 1935.

Dr. Edwin W. Ryerson held a Clinic for the State Department of the Division for Handicapped Children in Freeport, June 15.

Dr. Max B. Cutler addressed the staff nurses of the Tuberculosis Institute of Chicago and Cook County, June 25, on the subject of "Cancer."

Dr. J. M. Mora addressed the Marion County Medical Society, June 16, subject, "Varicose Veins."

Dr. A. W. Stillians discussed "Common Itching Dermatoses' before the Rock County Medical Society at Beloit, Wisconsin, May 24.

A symposium on tuberculosis was presented before the German Medical Society of Chicago June 7 by Drs. Henry C. Sweany, Frederick Gruneck, George C. Turner and Richard M. Davison.

The Chicago Society of Allergy was addressed May 16 by Drs. Rudolph H. Hecht and Ben Z. Rappaport on "Infantile Eczema from the Viewpoint of the Allergist" and Tell Nelson, "Antigenicity of Horsehair."

At a meeting of the Chicago Ophthalmological Society, May 9, Drs. Harry W. Woodruff, Joliet, spoke on "Epithelial Corneal Graft for Recurrent Pterygium" and Agnes Beulah Cushman showed pictures of the International Congress of Ophthalmology at Cairo.

James W. Cook, professor of chemistry, University of London, is presenting two courses on cancer at the University of Chicago this summer, June 15-July 21. One on "Cancer-Producing Chemical Agents and Their Biological Effects" and one on "Polycyclic Hydrocarbons and Their Relationship to Biological Problems." The latter course is concerned with the relationship of cancer to hormones.

Dr. John Marshall Weir, Jr., formerly assistant professor of anatomy, University of Mississippi Medical School, has been awarded the Howard Taylor Ricketts Prize of the University of Chicago for his researches on the Schwartzman reaction in the lung. The prize was established in 1913 to honor Dr. Ricketts. Dr. Weir received his bachelor of science degree from the University of Chicago in 1933; he received both his degrees of medicine and of philosophy in 1937.

News Notes

—Have you seen the present exhibit sponsored by the Chicago Medical Society in Marshall Field & Company Annex Building? It is on the subject of "Hobbies and Health" and is creating a great deal of interest.

—It is reported that 7,500 lay people visited the Hall of Health at Springfield. Many groups of school children with their teachers came from Springfield and nearby towns to inspect the exhibit.

—Two cases of Rocky Mountain spotted fever have been reported in Marshall County thus far this year, one of which was fatal, newspapers reported June 15. The disease was first reported in Illinois in 1934. In 1935 there were five cases and six each in 1936 and 1937.

—Members of the department of medicine of the University of Illinois College of Medicine are interested in studying patients with purpura haemorrhagica and polycythemia. Physicians are asked to communicate with Dr. Major H. Worthington, superintendent of Research and Educational Hospital, 1819 W. Polk Street, for additional information concerning the free hospitalization of these patients. Case histories of the patients should be sent to the hospital. The service is available only to residents of Illinois.

—Ten grams of radium have arrived in Chicago for the Chicago Tumor Institute. The entire amount will be used in the form of a radium pack. The apparatus which has been specially designed for maximum flexibility and protection includes a system of remote electrical control as an added safeguard for the patient and personnel. The entire unit is housed in a specially constructed lead and concrete chamber. The radium was obtained from the Union Minière du Haut Katanga, Brussels. The ten gram pack which permits treatment at distances not practical with smaller quantities will be used for treatment and research with special emphasis on comparative studies between radium pack therapy and supervoltage x-ray therapy.

—The Institute of Medicine of Chicago announces that competition for the 1938 Joseph A. Capps Prize, founded by the late Dr. Edwin R. LeCount, is open to graduates of Chicago medical schools who completed their internship or one year of laboratory work in 1936 or thereafter. The prize of $400 is awarded for the most meritorious investigation in medicine or in the specialties of medicine; investigation may also be in the fundamental sciences provided the work has a definite bearing on some medical problem. Manuscripts should be submitted to the Institute of Medicine of Chicago, 86 East Randolph Street, Chicago, not later than December 31, 1938.

If no paper presented is deemed worthy of the prize, the award may be withheld at the discretion of the Board of Governors.

—New regulations will be enforced in Chicago hospitals in an effort to reduce maternal deaths. In the future maternity divisions of hospitals are required to be separated from other services. There must be isolation quarters for infected mothers and a separate nursery for infectious infants. Delivery rooms must be separated from surgical and medical departments. Visitors in the maternity division must be limited to two a day in addition to the husband and must be excluded during nursing periods. Children may not be admitted. Contact with babies is prohibited and visitors must not be permitted to sit on the beds. Other provisions pertain to the personnel, sanitation and facilities used in the care of maternity patients.

—The state department of health announces that the following physicians have been placed in charge of the recently established full time health districts:

Dr. James A. Poling, Freeport, district 4, comprising Lee and Ogle counties.

Dr. Carl A. Peterson, Moline, district 5a, Henry and Mercer counties.

Dr. Sandor Horwitz, Peoria, district 6, Marshall, Peoria and Putnam counties.

Dr. John P. Walsh, Greenview, district 11, Case, Logan and Mason counties.

Dr. Robert H. Bell, Carlinville, district 12, Calhoun, Greene, Jersey, Macoupin, Morgan, Scott and (emergency) Bond, Madison and Montgomery counties.

Dr. Nettie A. M. Dorris, Paris, district 13, Champaign, Coles, Douglas, Edgar, Vermilion counties.

Dr. Joseph L. Bryan, Xenia, district 14, Clay, Clinton, Effingham, Jasper, Marion and (emergency) Fayette.

Dr. Roy W. Harrell, P. O. Box 161, Carbondale, district 16a, Jackson, Monroe, Perry, Randolph, Washington, and (emergency) St. Clair.

Dr. Roland R. Cross, Dahlgren, district 18, Franklin, Hamilton, Jefferson, Wayne and White.

Dr. Lewis S. Barger, Golconda, district 20, Gallatin, Hardin, Johnson, Massac, Saline, Pope and Williamson counties.

It is planned to have twenty health districts in the state on a full time basis.

At the June meeting of the Board of Directors, Dr. Conrad S. Sommer was appointed as Director of the Illinois Society for Mental

Hygiene to fill the position left vacant by the resignation of Miss Helen L. Myrick. Dr. Sommer has served the organization as its Medical Director since May, 1937. In addition to his medical work he will have entire charge of the program of the society.

Mrs. Kathleen O. Larkin, who came to the society in September, 1937, to fill the position of Educational Director, was appointed as Associate Director and will continue to direct the educational work.

Miss Grace Weyker, the General Assistant, was designated as Psychiatric Social Worker.

The officers of the Chicago Urological Society for the year 1938-39 are as follows: President, Dr. Charles B. Huggins; Vice-President, Dr. Irving J. Shapiro; Secretary-Treasurer, Dr. William J. Baker.

Deaths

Max Cohn, Chicago; Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Prussia, Germany, 1900! director of the department of radiology, Mount Sinai Hospital; aged 62; died, May 26, of suppurative pyonephrosis, diabetes mellitus, hypertrophy and abscess of the prostate.

Haim I. Davis, Chicago; University of Kharkov Faculty of Medicine, Kharkov, Russia, 1891; a Fellow, A. M. A.; professor of psychiatry, emeritus, University of Illinois College of Medicine; member of the Central Neuropsychiatric Association; senior attending neurologist to the Michael Reese Hospital; chief of the attending staff and formerly superintendent of the Cook County Psychopathic Hospital; consulting neurologist to the Winfield (Ill.) Sanatorium; aged 72; died, April 11, of carcinoma of the lung.

Abraham Royden Gregory, Jacksonville, Ill.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1907; a Fellow, A. M. A.; at one time assistant in ophthalmology at his alma mater; aged 59; died, April 8, of cerebral hemorrhage and hypertension.

Charles Hill, Chicago; Northwestern University Medical School, Chicago, 1902; member of the Illinois State Medical Society; aged 75; died, April 11, of carcinoma of the throat.

Robert Lee James, Blue Island, Ill.; Chicago Homeopahic Medical College, 1890; a Fellow, A. M. A.; College of Physicians and Surgeons of Chicago, 1891; on the staff of St. Francis Hospital; aged 72; died, March 25, of sarcoma of the vertebra.

Allen Buckner Kanavel, professor of surgery at Northwestern University Medical School, Chicago, was killed, May 27, in an automobile accident near Mojave, Calif., aged 63. Dr. Kanavel was born in Sedgwick, Kan., Sept. 2, 1874. He received his bachelor of philosophy from Northwestern University in 1896, medical degree cum laude in 1899, and later studied abroad. In 1901 he was instructor of clinical survery, assistant professor of surgery from 1908 to 1917, associate professor from 1917 to 1919 and since 1919 professor. He was chairman of the Section on Surgery, General and Abdominal, from 1930 to 1931, of the American Medical Association; past president, a regent and fellow of the American College of Surgeons; a member of the American Surgical Association, Western Surgical Association, Society of Clinical Surgeons and the Society of Neurological Surgeons. During the World War he served as a major in the medical corps and later was made a colonel. He was attending surgeon to the Wesley and Passavant hospitals in Chicago. Dr. Kanavel was the editor of *Surgery, Gynecology and Obstetrics,* a contributor to "Keen's System of Surgery," and to "Ochsner's System of Surgery" and to the periodical literature. He was the author of the well known book, "Infections of the Hand." In 1924 he received the honorary degree of doctor of science from Northwestern University.

Leon Wade Martin, Chicago; University of Illinois College of Medicine, Chicago, 1917; a Fellow, A. M. A.; associate in obstetrics and gynecology at his alma mater; served during the World War; on the staff of St. Joseph's Hospital; aged 47; died, March 6, of aplastic anemia and bronchopneumonia.

James Granville Mastin, Chicago; Keokuk (Ia.) Medical College, 1894; aged 80; died, March 3, in the Cook County Hospital, of arteriosclerotic heart disease.

John Ross Mitchell, Joliet, Ill.; Northwestern University Medical School, Chicago, 1916; a Fellow, A. M. A.; member of the Clinical Orthopedic Society, American Academy of Orthopedic Surgeons and the Radiological Society of North America; aged 50; died, March 17, in St. Joseph's Hospital, of diabetes mellitus and bronchopneumonia.

Malcolm Thomas Moore, Sullivan, Ill.; College of Physicians and Surgeons of Chicago, 1885; aged 80; was killed, March 29, when struck by an automobile.

James Henry Moran, Chicago; Northwestern University Medical School, Chicago, 1909; on the visiting staff of St. Anne's Hospital; aged 66, died, March 2, of organic heart disease.

Roy Ross Risk, Anna, Ill.; Rush Medical College, Chicago, 1930; served during the World War; aged 45; died, March 21, of angina pectoris.

Charles Clary Singley, Elmhurst, Ill.; Jefferson Medical College of Philadelphia, 1881; aged 81; died, March 17, in the Elmhurst Community Hospital.

Charles Lincoln Stoddard, San Diego, Calif.; Chicago Homeopathic Medical College, 1903; aged 75; died March 15, in the Mercy Hospital, of acute dilatation of the heart following?

Merle Horton Whitlock, Washington, Ill.; Hahnemann Medical College and Hospital, Chicago, 1906; past president of the school board of Peoria; aged 55; died March 29, in the Methodist Hospital, Peoria, of cerebral hemorrhage.

Are the Neuritic Symptoms of Pregnancy *due to a deficiency of vitamins B_1 and G?*

SUCH common neuritic symptoms of pregnancy as pains in arms and legs, muscle weakness, and (less frequent but more serious) paralysis of the extremities may result from a shortage of antineuritic vitamins, recent investigations appear to show. Although neuronitis of pregnancy has long been considered a toxemia, no toxins have ever been identified.

Clinical observations of Strauss and McDonald lead to the conclusion that the condition is a dietary deficiency disorder similar to beriberi, caused by lack of vitamin B_1, complicated by symptoms which may be traced to shortage of vitamin G. They report recovery in their cases receiving this therapy, including dried brewers' yeast.

Hyperemesis as Cause of Avitaminosis

Wechsler observes that all cases of polyneuritis of pregnancy recorded in the literature were preceded by long periods of severe vomiting. "It would seem," he adds, "that because of actual starvation these patients suffered from avitaminosis and consequent neuritis," a view likewise held by Hirst, Luikart, and Gustafson. Plass and Mengert observe that the practice of giving high carbohydrate feedings for hyperemesis gravidarum is still more likely to cause avitaminoses B and G.

Dried brewers' yeast, as it is far richer than any other food in vitamins B_1 and G, is being used with benefit both in the prevention and treatment of polyneuritic symptoms of pregnancy. Lewy found that additions of yeast to the diet reduced electric irritability of the peripheral nerves and brought clinical improvement. Vorhaus states that he and his associates, after administering large amounts of vitamin B_1 to 250 patients having various types of neuritis, including that of pregnancy, observed in about 90% of cases "varying degrees of improvement, i.e., from partial relief of pain to complete disappearance of all symptoms."

Need for Vitamins B and G in Lactation

Evans and Burr, Hartwell, Sure and co-workers, and Macy *et al* are among numerous authorities who find that the nursing mother also needs supplements of vitamins B_1 and G, from 3 to 5 times the normal requirement. Tarr and McNeile report that the physical, mental, and emotional status of 120 pregnant and lactating women receiving Mead's Brewers Yeast and other foods high in vitamin B was superior to that of a control group of 116 women.



Since the management of polyneuritis of pregnancy is difficult at best, it would appear logical to supply those dietary substances which may safeguard against it. One of the richest and most convenient sources of the anti-neuritic factors, vitamins B_1 and G, is Mead's Brewers Yeast Tablets. Consisting of nonviable yeast, they offer not less than 25 International vitamin B_1 units and 42 Sherman vitamin G units per gram.

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Book Reviews

Play and Mental Health. Principles and Practice for Teachers. By John Eisele Davis, M. A. New York. A. S. Barnes & Company. 1938. Price $2.50.

In this work the author presents the subject of play as usable material for the organization of effective mental hygienic practices in school. A psychology of play is developed in line with the spirit and recent advances in psychiatric practices in child education.

A Synopsis of the Diagnosis of the Acute Surgical Diseases of the Abdomen. By John A. Hardy, M. D. With 92 illustrations. St. Louis. The C. V. Mosby Company. 1938. Price $4.50.

This work is an up-to-date synopsis of the diagnosis of acute surgical diseases of the abdomen. It will prove convenient to both physicians and surgeons. It is divided in forty-one chapters, well illustrated and containing an exhaustive and accurate index.

Maternal Care Complications. Prepared by R. D. Mussey, M. D., F. H. Falls, M. D., P. F. Williams, M. D. and edited by F. L. Adair, M. D. University of Chicago Press. Price $1.00.

This work covers the principles and management of some serious complications arising during the antepartum, intrapartum, and postpartum period, approved by the American committee on maternal welfare.

This volume presents the essential facts relative to the three major causes of maternal mortality. If the physicians of this country will acquaint themselves with the contents of this volume there should be marked improvement in maternal care and a decrease in the maternal fetal mortality and morbidity.

The Life of Chevalier Jackson. An Autobiography. New York. The MacMillan Company. 1938. Price $3.50.

Today the science of bronchoscopy is firmly established and will stand as a lasting monument to the skill, and inventive genius, the determination and humanitarianism of its founder Chevalier Jackson. This work is packed with thrilling personal experiences, written in simple language telling the life story of the pioneer of the bronchoscope and the story is entirely apart from the man and his work. It tells how he first became interested in the use of the brochoscope for the removal of foreign bodies, how his fame spread until recognition of his genius as a specialist in this new field was world wide and patients were brought to him from the far corners of the globe.

The Romance of Proctology. By Charles Elton Blanchard, M. D. Youngstown, Ohio. Medical Success Press. 1938. Price $4.50.

This work is a story of the history and development of Proctology a much neglected branch of surgery from its earliest times to the present day, including brief biographic sketches of those who were its pioneers.

Immune-Blood Therapy of Tuberculosis With Special References to Latent and Masked Tuberculosis. By Joseph Hollos, M. D. New York. 1938.

In this book the author summarizes his observations in the field of specific therapy of tuberculosis covering a period of thirty years. The work is really an extension of the author's earlier publications on the subject in which he proposed a new conception of tuberculosis. The principle thesis of this is that tuberculosis appears not only in its well-known, manifest forms but that its presence may be masked by a great variety of symptom complexes or apparently independent diseases such as neurasthenia, rheumatism, thyroidism, epilepsy, etc.

Medical State Board Questions and Answers. By R. Max Goepp, M. D., formerly Professor of Clinical Medicine in the Graduate School of Medicine, University of Pennsylvania; formerly Assistant Professor of Clinical Medicine, Jefferson Medical College; formerly Assistant Visiting Physician, Philadelphia General Hospital; formerly Professor of Medicine, Woman's Medical College of Pennsylvania. Seventh Edition, Revised. 644 pages. Philadelphia and London: W. B. Saunders Company. 1938. Cloth, $5.50 net.

In this edition the questions and answers has been brought up-to-date by eliminating obsolete material and adding the newer developments. The text has been carefully scrutinized throughout which resulted in changes so numerous that the book has been entirely reset. In the section on Anatomy, THE BNA terminology has been adopted, at the same time retaining—in parenthesis—the old familiar terms (O. T.). A short section on medical jurisprudence has been added.

A Textbook of Hematology. By William Magner, M. D., D. P. H., Pathologist, St. Michael's Hospital, Toronto, Canada; Lecturer in Pathology, University of Toronto. 23 Text Figures; 3 Plates; 3 Charts; 395 Pages. Washable Fabric Covers $4.50. Publishers—P. Blakiston's Sons & Co., Inc., Philadelphia, Pa.

This book was written for the practicing physician as well as for those interested in the study of disease by laboratory methods. It describes fully but concisely the clinical features of disorders of the hemopoietic system and the associated changes in the blood and tissues. Space has been devoted to the origin and development of the blood cells and the etiology of the various blood diseases to afford a better understanding of the normal hemopoiesis and the effect of various disturbing factors upon the functions of their tissues. In the preparation of the book the author has had access to important clinical material.

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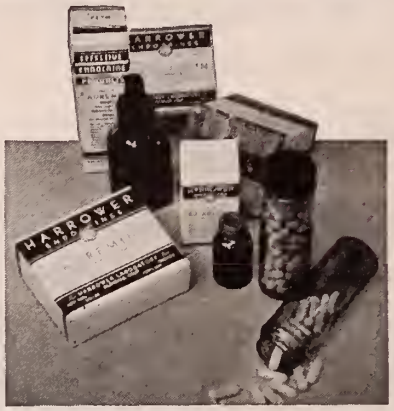
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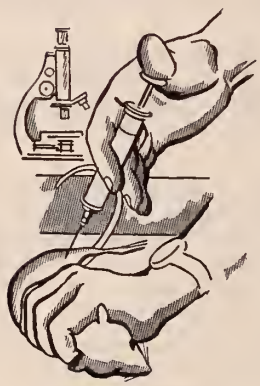
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PRACTICAL BACTERIOLOGY, HEMATOLOGY AND ANIMAL PARASITOLOGY. 9th Edition Revised, Elarged. By E. R. Stitt, M. D., Sc. D., D. D. L., Rear Admiral, Medical Corps and Surgeon General, U. S. N., Retired; and Paul W. Clough, M. D., Chief of Diagnostic Clinic, Johns Hopkins Hospital; Associate in Medicine, Johns Hopkins University; and Mildred C. Clough, M. D., Formerly Fellow in Bacteriology and Instructor in Medicine, Johns Hopkins University. 208 Illus. 4 In Colors. 961 Pages. Washable Fabric Covers $9.00. Publishers—P. Blakiston's Son & Co., Inc., Philadelphia, Pa .

This is a complete revision with special emphasis upon the advances in laboratory procedures, diagnosis and interpretation. The book considers all available types of laboratory tests and to facilitate the selection of appropriate types, an index of useful procedures has been prepared. The work is a comprehensive textbook of modern bacteriology.

The book is printed in excellent style and contains numerous illustrations, tables and reference material.

THE NEW INTERNATIONAL CLINICS. Edited by George Morris Piersol, M. D. Volume II. New Series One (old 48th). 1938. Philadelphia, Montreal, New York. J. P. Lippincott Company.

This work is original contributions: clinics; and evaluated reviews of current advances in the medical arts by outstanding medical men throughout the country.

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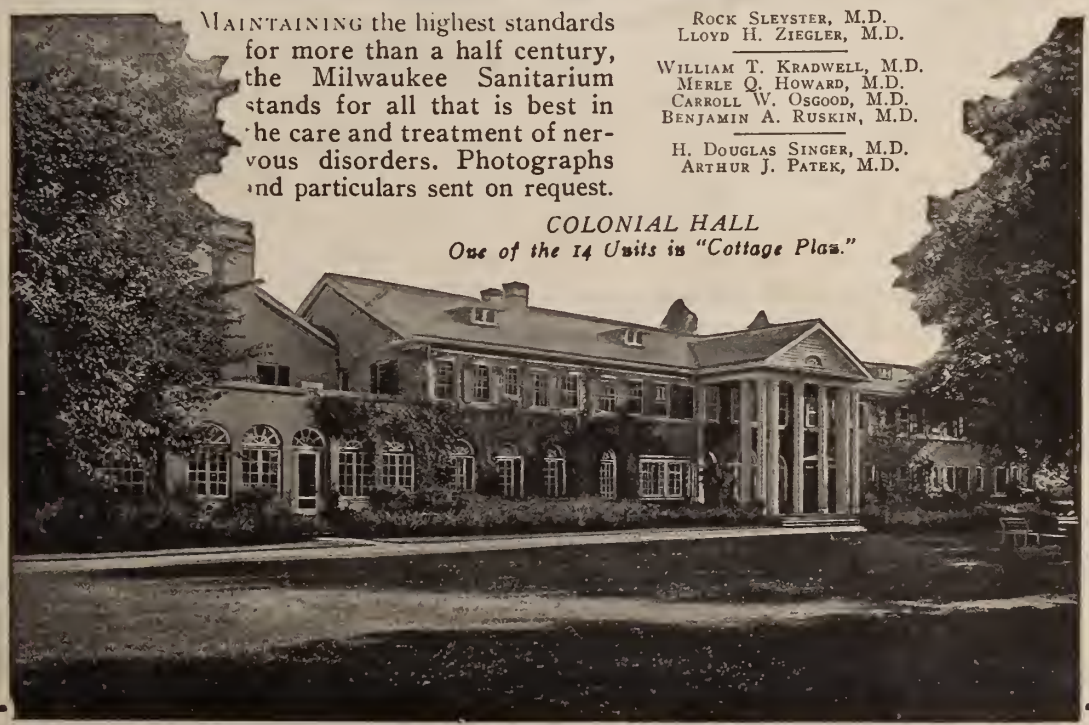
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BASIC OPERATIONS IN COMMERCIAL CANNING PROCEDURES

VI. COOLING THE TIN CONTAINER AFTER THERMAL PROCESSING

● On this page we have previously described certain basic operations in commercial canning procedures. These have included cleansing of the raw material; blanching; exhausting or pre-heating; sealing the tin container; and thermal processing of the sealed container. In this—the last of this series—we shall discuss the final basic operation, namely, the cooling of the sealed can immediately after the heat process.

One main reason for rapid and thorough cooling of the can contents—as soon as the objective of the heat treatment has been fulfilled—is more or less self-evident. Prompt cooling checks the action of the heat and thus prevents undue softening in texture or change in color of the food. Also important, particularly in the case of foods of an acid nature, is the prevention of excessive chemical action between the food and the metal container, which may occur if the contents of the can remain hot for an extended period of time. In modern practice, two types of cooling are commonly used, namely, air cooling and water cooling.

Air cooling, as the name implies, involves cooling of the tin container by facilitating radiation of its heat into the air. This type of cooling is adaptable to certain products in small cans. In other products, or in the case of larger cans, it is employed chiefly when the slower loss of heat, characteristic of this cooling method, is essential either for preservation of the food, or for the production of certain quality characteristics in the final product. Modern air cooling is accomplished in well ventilated, specially designed warehouses where the cans are piled in rows, allowing ample space between rows for efficient air circulation.

The several methods of water cooling and the technique by which they are carried out are detailed elsewhere (1). Briefly, water cooling may be effected in a variety of ways. The hot cans may be cooled by admitting water into the retort in which they were processed, or they may be cooled after removal from the retort by conveying the cans through tanks of cold, running water or through cold water showers. Large size, or irregularly shaped cans—processed under steam pressure—must be cooled in the closed retort at the end of the process to avoid undue strain on the containers. This is accomplished by "pressure cooling" in which pressure is maintained in the retort during the cooling of the cans, to counterbalance the pressure which develops during the process within the can itself. Commercially, cans are water-cooled to about 100°F. so that enough residual heat remains to dry the can exterior.

Present day canners are fully aware of the importance of cooling their products rapidly and completely as soon as the process is completed, in order to insure the production of canned foods with high quality characteristics. Consequently, in modern canneries the cooling operations are strictly supervised like the other basic operations in the commercial canning procedure. After inspection and labeling, the cooled cans are then ready to enter distribution channels for delivery to the consumer.

In this series of six discussions, we have attempted not only to describe the basic steps in commercial canning procedures, but also to explain their purposes. We trust this series may help bring a better understanding of this important method of food preservation.

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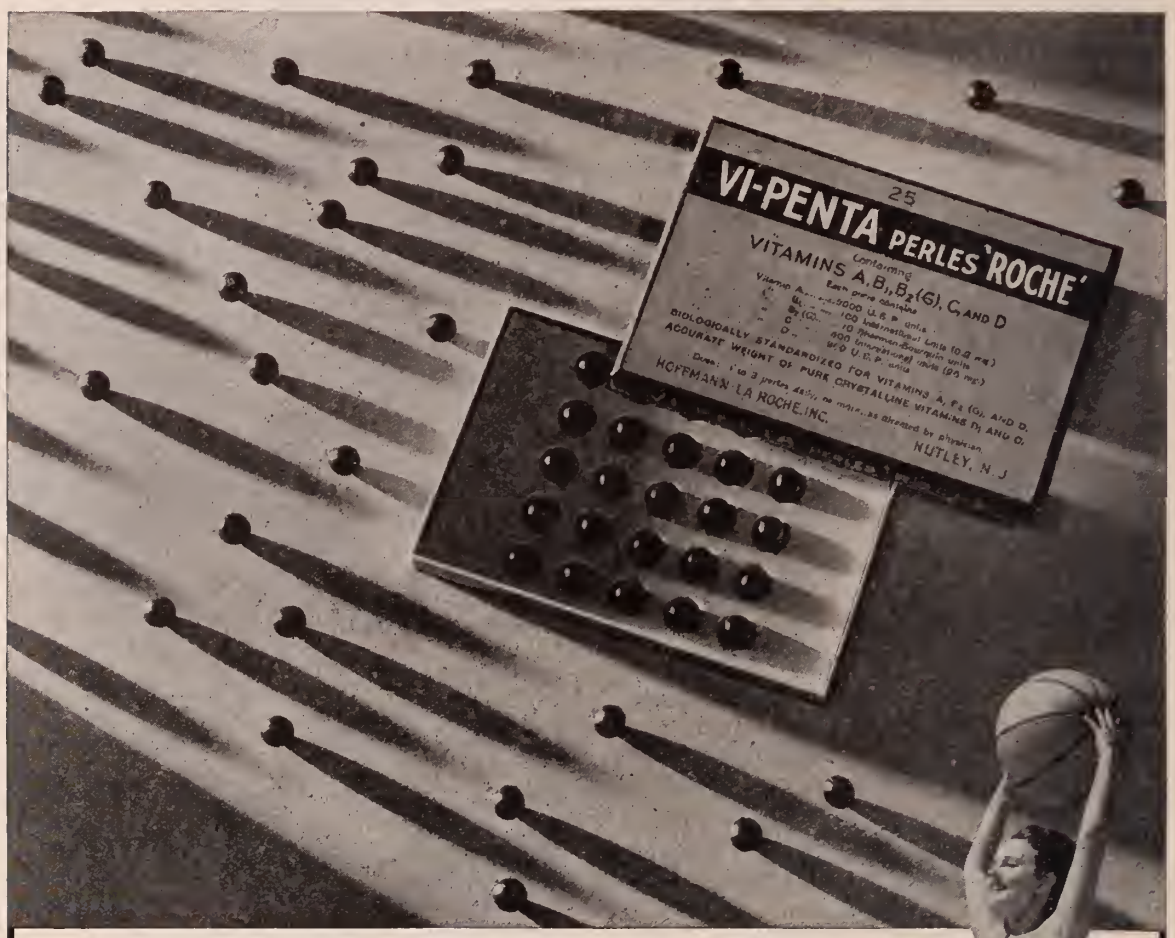
(1) 1936. A Complete Course in Canning, 6th Ed. The Canning Trade, Baltimore.

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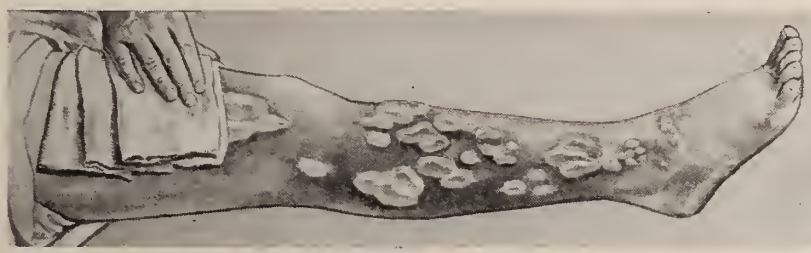
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Ralph P. Pears,	5th District, Normal	1940
T. B. Knox,	6th District, Quincy	1939
I. H. Neece,	7th District, Decatur	1940
C. E. Wilkinson,	8th District, Danville	1940
Andy Hall,	9th District, Mt. Vernon	1939
J. S. Templeton,	10th District, Pinckneyville	1939
Edw. S. Hamilton,	11th District, Kankakee	1941
C. B. Reed,	At Large, Chicago	1939
Rolland L. Green,	At Large, Peoria	1940
Rollo K. Packard,	At Large, Chicago	1941
Chairman of Council	E. P. Coleman	

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Editorials

THE SAN FRANCISCO SESSION OF THE A. M. A.

The eighty-ninth convention of the American Medical Association had the largest Pacific coast registration on record.

Six thousand and thirty-four physicians, surgeons and specialists attended the convention. Upwards of 250 were from Illinois, participated in its general sessions, meetings of its special sections and viewed and studied the million dollar commercial exhibit assembled in the Civic Auditorium.

In the scientific sections the attendance was way beyond the capacity of even the large halls which had been assigned to them. The frequent complaint was that there was not room in the large auditoriums used for section meetings. Moreover, many of the topics which had been in the forefront of medical consideration during the past year were exhaustibly considered including particularly blood dyscrasias, industrial diseases and new methods in the treatment of psychiatric conditions.

The entertainment at San Francisco was all that could be desired and that connoisseurs could devise. There were various tours of the city and surrounding points of interest, including San Quentin prison, the Navy Hospital Ship Relief, and the various points of interest.

THE HOUSE OF DELEGATES

The one hundred and seventy-five members of the House of Delegates representing the medical profession of the respective forty-eight states and American possessions, convened promptly at 10 a. m., June 13, to listen to the summarizing of the Association's activities of the past year and to the reports of the trustees and various committees and officers of the Association as well as to the introduction of resolutions and the appointment of a personnel for the various committees and for the transaction of routine business.

At the meetings of the House of Delegates many matters were presented which have a vital

bearing on the future of medical practice. All controversial subjects were thrashed out in reference committee meetings, thus avoiding discussions which would have been impractical in a general meeting.

The complete proceedings of the House of Delegates were published in the *Journal of the American Medical Association,* July 2, 1938, and should be carefully read and contents thoroughly digested by every member. By a careful perusal of the proceedings as published in the July 2, issue, the reader will get a general bird's-eye view of what actually happened.

The House of Delegates lost no time in getting down to considering the problem of medical economics. At this session as in previous sessions, covering a period of years, the problem of medical economics was paramount and received more consideration than any other problem. Tax-paid medicine or socialized medicine is our major present day problem. Regimentation of the healing profession under paternalistic governmental auspices was hit hard in speech, report and resolutions throughout the entire session of the House of Delegates.

Both the incoming and outgoing Presidents of the Association challenged all attempts to wrest from the profession control over its own services. The Board of Trustees hit recent agitation for tax-paid medicine by some grandiose scheme. The incoming president Dr. Irving Abell, said: "The health of the nation neither should be made the football of politics nor consigned to the fallacious judgment of those who are untrained in the intricacies of its care." The retiring president, Dr. Upham, said: "A manifest determination of the medical profession to preserve the individual type of practice as best suited to this country and to maintain that practice on the highest possible plane is the ideal plan."

The speaker of the House of Delegates Dr. Van Etten, reminding the delegates of their powers and responsibilities said: "Every practitioner of medicine looks to you, *and back of these practitioners are millions of people who are daily looking for the best in medical care,* not merely adequate care or just any medical care that may be promised by fraternalistic bureaus, but a constantly improving medical care that a constantly improving medical profession can offer them."

The speaker further remarked: "I have faith in the success of the medical profession in riding out disgruntled criticism, and I believe that the general sanity of the American people will lead them to support an honest medical service such as is offered by the American Medical Association.

The report of the board of trustees is characterized by a very notable expansion of the activities of the various councils, bureaus, and departments of the Association until, at times, available facilities have been seriously strained.

The gross earnings of the Association for the year 1937 were $1,651,203.74; operating expenses were $982,830.10; the operation of the council, bureaus and departments amounted to $131,635.63; incidental expenses, including insurance, taxes, building expenses and depreciation, fuel, legal services and special publications amounted to $218,601.19, showing a net income of $122,242.92 of which sum $83,563.74 represents income from investments so that the actual net operating income was $38,679.18.

The special journals published by the American Medical Association were published at a loss of $25,958.37 to the Association in 1937, while *Hygeia* was published at a loss of $31,004.90. It may be necessary to discontinue some of the special publications if subscriptions therefore are not increased. The quarterly cumulative *Index Medicus,* an almost indispensable publication, lost $12,616.32; the American Medical Directory also a medical necessity loses money.

The Board of Trustees reported that the Federal Bureau of Internal Revenue had rescinded its decision, that the A.M.A. does not come within the purview of the revenue act of 1936; that the association is not a scientific or educational corporation within the meaning of that act, but, rather, that it is a business organization and, therefore not exempt from tax under the social security act This means that the A.M.A. is now required to pay between $50,000 and $100,000 for the current year alone and that if the revenue department decides the law is retroactive the association may have to pay at least a quarter of a million dollars. An appeal from this decision has been filed and it is hoped that an equitable decision with regard to the matter will eventually be reached.

The report of the secretary shows that on April 1, 1938, the number of members enrolled

was 109,135, as compared to 105,160 on the corresponding date in 1937, an increase in membership of approximately 4,000 and in fellowship more than 2,000. The secretary also reported a steady growth of better organizations throughout the United States.

The Bureau of Medical Economics is conducting a survey of need for medical care and it was suggested that in making this survey it is necessary that every State and County medical society heartily co-operate, as this information will be essential to determine the exact need for any change in the plan for medical practice.

Throughout the sessions of the House of Delegates the subject of medical care was much under discussion and it was repeatedly emphasized that it is not the high cost of medical care, but rather the general low economic status of a certain class of people that makes them unable to purchase that care. It was repeatedly pointed out that the correction lies in the improvement of the economic status of these people and not in any change in medical practice or any form of government control of medical practice. When economic conditions are so adjusted that employment carries a living wage, then adequate medical care under our present setup will be available to all the people.

The bureau of medical economics has also investigated the many forms of medical practice and has made extensive study of group hospitalization and workmen's compensation. They have also looked into the insurance medical directories and advise physicians not to be victimized by publishers of pay-as-you-enter insurance medical directories.

The bureau of legal medicine and legislation reports much activity during the past year supporting the enactment of the National Cancer Institute Act, the Marihuana tax act, an act authorizing the bureau of mines to manufacture and sell helium for medical and other non-governmental uses and an act devolving on the federal trade commission jurisdiction over the advertising of foods, drugs, diagnostic therapeutic devises and cosmetics.

The report of the judicial council gave some pertinent reminders to county and state medical societies. It advised strongly against any society passing specific resolutions for the purpose of controlling unethical practice; for instance, forbidding contract practice. The council foresaw only trouble from this method and advised proceedings against members under the general code of ethics. The council also suggested that the county and state medical societies should adopt a definite and standard procedure for hearings on ethical conduct.

The House of Delegates endorsed the visual standard for automobile drivers which were recommended by the Section on Ophthalmology.

FOR A DEPARTMENT OF PUBLIC HEALTH

The Federal Department of Public Welfare included in the recent government reorganization bill was condemned by the House of Delegates. In its place the delegates at San Francisco again approved a Cabinet Department of Health which should be directed by a medical man as secretary. It was deemed appropriate and essential that the delegates should point out specifically that they, and not the special societies or individuals anywhere are the truly qualified representatives of medical practitioners in America and that their actions in San Francisco reflect the policies and beliefs of organized medicine in the United States.

It is probable there were more interested newspaper reporters from all parts of the country than ever before when the House of Delegates of the American Medical Association met in June, 1938.

Contrary to expectations of agitators who endeavor to incite disharmony and revolt among the physicians who represent the medical profession in the House of Delegates, the House displayed a singleness of purpose and soundness of attitude in its concern with the important question that came before it.

The American Medical Association emerged from the storm and stress at San Francisco without the split predicted in the headlines by the 430 episode, and it is still firmly established as to public policy upon the foundation of the famous ten principles. The fundamental principles adopted at Cleveland were reiterated as basic to a high quality of medical service.

The House of Delegates considered and adopted many and far reaching resolutions. Several of the more important are as follows:

Dr. E. H. Skinner, Section on Radiology, presented a resolution having to do with the standards of practice of medicine in hospitals, attempting to define the status of the radiologist, the pathologist, and the anesthetist under

hospital insurance plan. It was refered to the council on education and hospitals which considered several resolutions which were offered from various sections of the country. The report of the council on medical education and hospitals is as follows:

The proposers of these resolutions, the delegates from the Massachusetts Medical Society, members of the California Medical Association and others met with the Council to express their views concerning the problems that concern the practice of medicine in hospitals by radiologists, pathologists and anesthetists. These problems have been rendered more acute by the rapid extension of systems of group hospital insurance within the last few years. The Council believes that these problems are of vital concern to the medical profession; that unwise decisions at this time may lead to consequences that would be disastrous to physicians and to the public alike, and that, therefore, a serious study should be made of existing relationships between hospitals and the physicians practicing therein, especially in the departments of anesthesia, radiology, pathology and physical therapy, with a view to standardizing the relationship of these services to the hospital and, where necessary, of reaffirming the principles of ethics involved.

The Council recommends that it, jointly with the Bureau of Medical Economics, be authorized to undertake these studies and to confer with other interested agencies, in order that it may be in a position to establish ethical standards for the practice of medicine by physicians holding positions in hospitals and to prevent the exploitation of either the public or the profession. If during this study it is revealed that hospitals registered and approved by the Council are exploiting the public or the profession, such approval may be revoked.

In conformity with the action of the House of Delegates a thorough study will be made during the coming year and proper recommendations will unquestionably be submitted to the House of Delegates at the 1939 session.

Until new recommendations and their adoptions by the House of Delegates, the policy of the American Medical Association in relationship to these matters remain unchanged. In the interval before final adoption it is well to remember the action taken by the House of Delegates in 1938, which reads:

Since . . . some state and county medical societies may find it necessary to develop preferable procedures for supplying the needs where medical services are insufficient or unavailable, it is urged that these medical societies be guided in the development of these procedures by the ten principles adopted by the House of Delegates in 1934. The application of these ten principles to specific suggestions or proposals for the organization of medical services may be facilitated by utilizing the method of direct cash payments to individual members. Your committee unanimously concurs in the suggestion and recommends that the American Medical Association adopt the principle that in any place or arrangement for the provision of medical services the benefits shall be paid in cash directly to the individual member. Thus, the direct control of medical services may be avoided. Cash benefits only will not disturb or alter the relations of patients, physicians and hospitals.

Your committee has considered in detail that portion of the report of the Board of Trustees devoted to the Bureau of Medical Economics under the heading "Group Hospitalization" and also the separate statement of the Bureau of Medical Economics entitled "Group Hospitalization Insurance." Your committee commends the clarity and forcefulness of these statements and recommends that the ten principles adopted in 1934 as the policy of the American Medical Association be amplified by the addition of the following statement to Principle 4:

If for any reason it is found desirable or necessary to include special medical services such as anesthesia, radiology, pathology or medical services provided by outpatient departments, these services may be included only on the condition that specified cash payments be made by the hospitalization organization directly to the subscribers for the cost of the services.

Disapproval of the inclusion of special medical services on a service basis in hospitalization insurance contracts will then be explicit but a constructive alternative arrangement will be possible.

The actions taken by the House of Delegates is clear cut and definite and until modified is the point of view of the American Medical Association.

The lay press seems obsessed to put across the message to the effect that the American Medical Association and various groups within the profession oppose a hospital insurance system.

The attitude of the lay press is not in conformity with real facts. The medical profession is positively opposed to the various types of hospital insurance plans which violate State insurance laws governing medical practice, and to those plans promoted for individual gain.

Many hospital service plans continue to ignore State Medical Practice Acts which require persons to possess certain educational requirements and pass an examination before they are permitted to diagnose illness or treat the sick Hospitals and hospital insurance corporations cannot fulfil these requirements. In most states the courts have therefore recognized that it is contrary to good public policy for a corporation to attempt to practice medicine by hiring physicians to practice medicine for the corporation.

Physicians have always objected to those arrangements whereby a corporation (and most hospitals are corporations) attempts to sell the services of roentgenologists, pathologists and anesthetists in a manner which results in a profit for the corporation or places the directors of the corporation in control of the personal relations between the patient and his physician. Similar undesirable relations are created when a corporation attempts to practice any profession. Consequently, the courts have also recognized that a corporation cannot practice law or hire lawyers to practice law for it. The same holds true of dentistry. These principles are maintained to give the individual person reasonable assurance that he will receive competent services from physicians, lawyers and dentists.

The action taken by the House of Delegates in San Francisco holds that it is desirable to permit each person to receive the benefits from a hospital insurance system in cash so that he may purchase his own medical services from whatever source he may desire. When the individual himself pays for the services he receives he can be assured of adequate and satisfactory services; otherwise he can refuse to make the payment. Under the cash-to-the-insured payment arrangement, which is the long-established method used by accident and health insurance companies, the insured person receives a definite number of dollars with which he can purchase services that are satisfactory to him. He does not have to accept whatever services may be offered by the insuring organization. The rights of the patient certainly are superior to those of the hospital, the corporation or any other interest.

THE COMMITTEE ON PUBLIC RELATIONS

Resolutions suggesting the appointment of public relations committee which would be responsible to the House of Delegates rather than to the Board of Trustees and who would direct the public contact and be spokesman for the American Medical Association was introduced by delegates from Michigan and California. The Michigan resolutions proposed a change in by-laws which would provide for such a committee and place a limited amount of money at its disposal. Both resolutions were referred to the Reference Committee on Amendments to the Constitution and By-Laws and later to the joint committee of the Committee on Amendments to Constitution and By-Laws and the Committee on Legislation and Public Relations. During the entire interim between the first and last sessions of the House of Delegates the Joint Committee heard arguments pro and con and labored strenuously to bring about a proper and at the same time amicable solution of the problems presented by the resolutions. At the last session of the House of Delegates the Joint Committee submitted the following report:

REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BY-LAWS AND REFERENCE COMMITTEE ON LEGISLATION AND PUBLIC RELATIONS AS A JOINT COMMITTEE.

Dr. H. A. Luce, Chairman of the Joint Committee, presented the following report, which was adopted on motion of Dr. Luce, seconded by Dr. A. A. Ross, Texas, and carried:

Your joint committee wishes to state at the outset that in its opinion there exists within the House of Delegates, all officers of the society and the entire membership of the organization complete harmony as to purposes and objectives, said purposes and objectives being better trained and better qualified physicians to the end that American people may still continue the recipients of the highest quality of service. Furthermore, any apparent lack of harmony in the ranks of organized medicine is not based on truth but is due to attempts to discredit that large group who from the time of Aesculapius has contributed so much to human life and happiness.

Your joint committee has given careful and prolonged consideration to the proposed amendments to the By-Laws, presented by the delegation from the state of Michigan, proposing the creation of a committee on public relations, and the cognate resolutions presented by Dr. Lyell C. Kinney, California, requesting the Board of Trustees to employ professional public relations counsel, the proposed amendments and resolutions having the object of establishing a closer relationship between the public and organized medicine.

Delegates from the states of California, Massachusetts and New York spoke in support of the resolutions, and a number of other delegates appeared to denote their interest. Your committee also received from Dr. Austin A. Hayden, Secretary of the Board of Trustees, from Dr. Olin West, Secretary, from Dr. Morris Fishbein, Editor of THE JOURNAL, from Dr. W. C. Woodward, Director of the Bureau of Legal Medicine and Legislation, from Dr. W. W. Bauer, Director of the Bureau of Health Education, and from Dr. R. G. Leland, Director of the Bureau of Medical Economics, detailed information concerning the contacts and channels through which the public is constantly reached through agencies already in existence and in active operation. The joint committee was impressed with the importance of avoiding any innovation which might disturb these arrangements, which

have been built up through the years and depend on many subtle and delicate personal relationships.

Your joint committee also considered the implications of the costs involved, together with the tax liabilities that might arise from any radical change in the methods of publicity maintained by the Association.

The foregoing considerations have led your committee to return the proposed amendments and resolutions without its approval. However, the committee feels impelled by reason of the sentiment revealed by the presentation of these proposed amendments and resolutions and the support of them from so many diverse quarters, as well as by common knowledge of the frequent unsatisfactory attitude of the press, to ask the House of Delegates to impress on the Board of Trustees its feeling that careful consideration should be given to the operation of our agencies of public information so that, on the one hand, the necessary *fortiter in re* may be preserved and, on the other hand, that certain deficiencies of *suaviter in modo* may be corrected.

Respectfully submitted.

For the Committee on Amendments to the Constitution and By-Laws:

For the Committee on Legislation and Public Relations:

Adopted without a dissenting vote.

From Wisconsin and Iowa came resolutions objecting to the policies followed by the Council on Foods in connection with butter and butter substitutes. In an earlier ruling the council decided that pure butter needs no approval and that butter substitutes do need certification. The butter industry contended that butter should be listed if the substitutes are to be listed. The Reference Committee recommended that the Council on Foods, re-establish suitable standards for acceptance of butter and covering the advertisements thereof. The report of the committee was adopted.

A resolution from Illinois asking for an opinion on the ethical standing of physicians teaching in schools of chiropody was referred to a Reference Committee for consideration, the Reference Committee recommended that same be referred to the Judicial Council for review and subsequent report.

A resolution was introduced and approved which requested that the Federal Government be petitioned to create a Bureau of Health to consider all health matters which are not referable to the services of the Army and Navy.

A resolution was unanimously passed deploring the bombing of hospitals, Red cross units and innocent people in countries now at war.

Some of the more important activities passed by the House of Delegates may be listed as follows:

Reiterated its previous approval of the activities of its committee on contraception.

Approved a recommendation of the Judicial Council which among other things makes it unethical for any one to give direction for the use of rented radium, unless the person giving the direction actually sees the patient on whom the rented radium is to be used.

In executive session considered the evidence given and the resolutions proposed by the New Jersey delegates criticizing some activities of the editor of the Journal of the A. M. A.

Received the address and accepted the invitation of Miss Josephine Roche, representing the President of the United States, to send an official representative of the Association to the then forthcoming meeting of the Welfare Committee in Washington.

Elected Dr. Rudolph Matas of New Orleans as recipient of the distinguished service award.

Elected Dr. Rock Sleyster of Wisconsin president-elect. Elected as vice-president Dr. Howard Morrow of California; elected speaker of the House Dr. H. H. Shoulders, Tennessee; elected vice-speaker, Dr. R. W. Fouts, Nebraska.

The following places were selected for the next there annual meetings off the association; St. Louis in 1939, New York City in 1940, and Cleveland in 1941.

ILLINOIS PHYSICIANS WHO ATTENDED SAN FRANCISCO MEETING.

(Registered Monday)

Abt, Arthur F., Chicago
Adair, F. L., Chicago
Anderson, U. N., Chicago
Anderson Hamilton, Chicago.
Applebach, Carl W., Chicago
Arestad, F. H., Chicago
Armstrong, Wilber P., Jr., Springfield
Ayling, G. H., Kankakee
Baer, Joseph L., Chicago
Baker, William J., Chicago
Barbour, Orville, Peoria
Barker, M. Herbert, Chicago
Bauer, W. W., Chicago
Beck, Joseph C., Chicago
Benjamin, R. L., St. Anne
Biehn, Highland Park
Bing, F. C., Chicago
Birch, Carroll L., Chicago
Bousfield, M. O., Chicago
Braun, Will C., Chicago

Browne, R. W., Dwight
Buhlig, Walter H., Chicago
Burstein, H. J., Decatur
Camp, Harold M., Monmouth
Campione, N. Louis, Chicago
Carlson, A. J., Chicago
Carr, James G., Chicago
Chor, Herman, Chicago
Connelly, Marie L., Chicago
Conner, James A., Chicago
Cornbleet, Theodore, Chicago
Creer, Ralph P., Hines
Curtis, Arthur H., Chicago
Cutter, W. D., Chicago
Czaja, Leo M., Chicago
Davidsohn, Israel, Chicago
Diamond, I. B., Chicago
Dorne, Maurice, Chicago
Duane, Joseph F., Peoria
Durham, O. C., North Chicago
Dyas, Frederick G., La Grange
Ericson, Charles E., Quincy
Fenger, Frederic, Chicago
Finnerud, Clark W., Chicago
Fishbein, Morris, Chicago
French, Robert L., Oak Park
Galloway, Charles Edwin, Evanston
Geiger, Arthur H., Chicago
Gellhorn, Ernest, Chicago
Green, W. I., Lawrenceville
Hall, Alice K., Chicago
Hamilton, E. S., Kankakee
Hardt, Leo L., Chicago
Harger, John R., Chicago
Hark, Florence W., Chicago
Hawkinson, Oscar, Chicago
Hayden, Austin A., Chicago
Heckel Norris J., Chicago
Henricksen, Karl J., Chicago
Hirsch, Edwin F., Chicago
Holmes, Rudolph W., Chicago
Holt, Helen, Chicago
Hospers, Cornelius A., Chicago
Howell, Katharine M., Chicago
Hruby, Allan J., Chicago
Hull, Thomas G., Chicago
Hutton, James H., Chicago
Irons, Ernest E., Chicago
Ivy, A. C., Chicago
Jansey, Felix, Chicago
Jenkinson, Edw. L., Chicago
Johnson, Russell C., Berwyn
Kato, Katsuji, Chicago
Kaufmann, Gustav, L., Chicago
Kemp, Robert S., Chicago
Kern, Maximilian, Chicago
Kittler, W. E., Rochelle
Kretschmer, Herman L., Chicago
Laing, Grant H., Chicago
Larrain, Abel R., Chicago
Leech, Paul Nicholas, Chicago
Leland, R. G., Chicago
Lewin, Philip, Chicago
Low, Abraham, A., Chicago
Luhan, Joseph A., Chicago
McNulty, Patrick H., Chicago
Mackay, Roland P., Chicago
Marshall, William A., Chicago
Mayers, Laurence H., Chicago
Merkel, Henry, Wilmington
Metz, A. R., Chicago
Miller, C. O., Chicago
Milles, George, Chicago
Montgomery, Albert H., Chicago
Moore, J. J., Chicago
Mundt, G. Henry, Chicago
Myers, William H., Coal Valley
Neal, Mary Paulson, Quincy
Packard, R. K., Chicago
Parsons, Eloise, Chicago
Pflock, John J., Chicago
Pollack, M., Peoria
Portis, Sidney A., Chicago
Pronger, Earle J. W., Blue Island
Quinn, H. Edmond, Chicago
Robins, Louis S., Chicago
Rosenthal, Louis M., Chicago
Saphir, Otto, Chicago
Schmidt, Florian E., Chicago
Schmitz, Henry, Chicago
Schneider, Philip F., Evanston
Schorr, Henry C., Chicago
Searle, C. H., Chicago
Singer, H. Douglas, Chicago
Skaggs, Charles S., East St. Louis
Soper, Gail R., Evanston
Speed, Kellogg, Chicago
Spivek, Mandel L., Chicago
Stein, Justin John, Hines
Steinberg, D. L., Elgin
Stuppy, George William, Chicago
Tate, Louis N., Galesburg
Thorek, Max, Chicago
Unger, Leon, Chicago
Van Hoosen, Bertha, Chicago
Van Prohaska, John, Chicago
Voigt, C. B., Mattoon
Walsh, James J., Chicago
Weissman, Morris, Chicago
Wellmerliing, Herman W., Bloomington
West, Olin, Chicago
Whalen, Charles J., Chicago
White, Cleveland J., Chicago
Wilkinson, C. E., Danville
Wineberg, Isaac H., Quincy
Winters, William L., Highland Park
Wood, Willard L., Chicago
Woodward, W. C., Chicago

(Registered Tuesday)

Allen, Thomas D., Chicago
Armitage, R. B., Lawrenceville
Ashmenckas, Natalie, Chicago
Barnet, Irving F., Chicago

Barth, Earl E., Chicago
Blatt, Maurice L., Chicago
Brown, Ira, Chicago
Buchanan, D. N., Chicago
Burstein, H. J., Decatur
Carlisle, Wm. T., Chicago
Caro, M. R., Chicago
Cassidy, R. M., Oak Park
Coulter, John S., Chicago
Crawford, W. L., Rockford
De Bere, C. J., Chicago
Dice, H. F., Ridgefarm
Dvorak-Theobald, Georgiana, Oak Park
Fara, Frank J., Cicero
Fovargue, I. P., Chicago
Gailey, W. W., Bloomington
Gradle, Harry S., Chicago
Greenwood, G. J., Chicago
Gustafson, Olga F., Chicago
Halley, Edmund P., Decatur
Harris, E. A., Harvey
Houston, S. D., Polo
Hawkinson, Robt. J., Chicago
Head, Jerome R., Chicago
Heinemeyer, F. VaV., Rockford
Hesseltine, A. Close, Chicago
Hubbard, S. M., Ridgefarm
Huggins, Ben H., Evanston
Klaas, Rosalind, Chicago
Kreuscher, Philip H., Chicago
LaRue, R. E., Erie
Litvin, Nina, Chicago
Martin, Clement L., Chicago
Michel, Herbert L., Chicago
Michell, George W., Peoria
Milligan, J. Donald, Elgin
Needels, Louis J., LeRoy, Martinez
Nelson, Tell, Evanston
Norris, F. A., Jacksonville
Nowakovsky, Sophie T., Chicago
Ormsby, Oliver S., Chicago
Pope, Chas. Evans, Evanston
Poncher, Henry G., Evanston
Rich, Ciney, Decatur
Robertson, Oswald H., Chicago
Ross, George W., Watseka
Schmid, H. J., Harvard
Simonds, J. P., Chicago
Smith, G. B., Godfrey
Snorf, Lowell D., Chicago
Stephan, Carl T., Chicago
Stillians, A. W., Chicago
Stoll, C. G., Sumner
Sweaney, Henry C., Chicago
Templeton, F. E., Chicago
Thompson, Willard O., Chicago
Vaughn, Arkell M., Chicago
Weir, E. W., Atwood
Wescott, Virgil, Chicago

(Registered Wednesday)

Akers, E. David, Chicago
Allen, Lee G., Litchfield
Apfelbach, George L., Chicago
Barrett, Channing W., Chicago
Binswanger, H. F., Chicago
Bollaert, F. E., East Moline
Bucy, Paul C., Chicago
Chainski, Ed. L., Chicago
Davenport, Frank N., Moline
Fovargue, Irwin P., Chicago
Goldberger, S. M., Chicago
Hall, George W., Chicago
Howard, H. C., Chicago
Hershfield, Alex S., Chicago
Hoeltgen, Maurice M., Chicago
Kunde, M. M., Chicago
Levinson, Sidney D., Chicago
Lieberthal, Frederick, Chicago
Mars, Hartley F., Chicago
Mock, Harry E., Evanston
Newquist, M. N., Chicago
Pollock, Frederic, Chicago
Quint, Harold A., Evanston
Roome, Norman W., Chicago
Schacht, Frederick W., Chicago
Shulian, O., Frank, Quincy
Smith, Durand, Plano
Stenhouse, E. E., Chicago
Williams, V. Trivoli
Willis, David A., Chicago

(Registered Thursday)

Hirsch, Edwin W., Chicago
Holmberg, Clara E., Springfield
Kullman, Paul J., Chicago
Mitchell, James H., Chicago
Sadler, Lena K., Chicago
Sadler, William S., Chicago
Weinstein, M. L., Chicago

The following Illinois Physicians participated in a Scientific program (we name them disregarding alphabetical arrangement).

Ernest E. Irons: Opened discussion on paper by Martin H. Dawson and Ralph H. Boots of New York on "The Treatment of Rheumatoid Arthritis."

Daniel B. Hayden and Edward L. Chainski: "Acute Glomerular Nephritis with Special Reference to the Course and Prognosis": A Study of 150 Cases (Lantern Demonstration).

Joseph L. Baer: "The Cervix Uteri in Obstetrics and Gynecology." (Lantern Demonstration.)

Charles Edwin Galloway: Color Photography of the Uterine Cervix. (Lantern Demonstration.)

Arthur H. Curtis: "Anatomic Factors in the Pathogenesis and Treatment of Urethrocele and Cystocele." (Lantern Demonstration.)

Fred L. Adair, H. Close Hesseltine and Lucile Hac: "Experimental Study of Behavior of Sulfanilamide." (Lantern Demonstration.)

Henry Schmitz, Herbert E. Schmitz and John Francis Sheehan: "The Action of Measured Doses of 800 Kilovolt Roentgen Rays on Carcinomas of the Uterine Cervix."

Harry S. Gradle: Discussed paper by Phillips Thygeson, New York, and Polk Richards, Albuquerque, N. M., on subject, "The Nature of the Filtrable Agent of Trachoma." (Lantern Demonstration.)

Watson W. Gailey, Jr., Bloomington, Ill.: Opened discussion on paper by Conrad Berens and Donald W. Bogart of New York on subject: ("Postoperative Complication of Cataract Operations.) (Lantern Demonstration.)

Georgiana Dvorak-Theobald, Oak Park: Discussed paper by Theodore E. Sanders, St. Louis, on subject: "Mixed Tumors of the Lacrimal Gland." (Lantern Demonstration.)

Austin A. Hayden: "Recent Developments in Audiometers and Hearing Aids." (Lantern Demonstration.)

Max Cutler: Discussed paper by Chevalier Jackson and C. L. Jackson, Philadelphia, on subject: "Cancer of the Larynx: Analysis of Results of 800 Cases." (Lantern Demonstration.)

Joseph C. Beck: Opened discussion of paper by Durwin H. Brownell and I. Jerome Hauser, Ann Arbor, Michigan, on subject: "Malignancy of the Nasopharynx." (Lantern Demonstration.)

Oswald H. Robertson: "Recent Studies in Experimental Lobar Pneumonia." (Lantern Demonstration.)

James A. Conner: "Treatment of Pertussis." (Lantern Demonstration.)

Mandel L. Spivek: "A Criticism of Present Day New-born Nursery Practice."

Katsuki Kato: "Hematologic Indexes in Normal and Anemic Infants and Children." (Lantern Demonstration.)

Orville E. Barbour, Peoria, Ill.: "Clinical Effects of Whole Adrenal Gland by Mouth." (Lantern Demonstration.)

M. Herbert Barker: "Sodium Chloride Tolerance in Chronic Nephritis with Some Observations on Potassium and Sulfate Ions." (Lantern Demonstration.)

Edwin F. Hirsch: "Arterial Occlusions with Aseptic Necrosis of Bones." (Lantern Demonstration.)

Samuel M. Feinberg, Chicago, and O. C. Durham, North Chicago: "Annual Variations in Seasonal Aspects of Mold Allergy: A Clinical and Atmospheric Study of Over Three Years." (Lantern Demonstration.)

Israel Devidsohn: "A Method for Differentiation of Blood Groups A1 and A2." (Lantern Demonstration.)

Henry C. Sweany: "X-ray Diffraction Analysis as Applied in Pneumoconiosis." (Lantern Demonstration.)

A. A. Low: Opened discussion on paper by Richard H. Young and G. Alex. Young, Omaha, on "Treatment of the Psychoses with Hypoglycemia and Induced Convulsions." (Lantern Demonstration.)

D. N. Buchanan and Percival Bailey: "Brain Tumors in Infancy and Childhood."

Archibald L. Hoyne: Discussion on paper by Josephine B. Neal, New York, on subject of "The Treatment of Acute Infections of the Central Nervous System with Sulfanilamide." (Lantern Demonstration.)

R. P. Mackay: "Chronic Adhesive Spinal Arachnoiditis: A Clinical and Pathologic Study." (Lantern Demonstration.)

Clark W. Finnerud, Chicago, and Marion B. Sulzberger, New York: "Industrial Dermatoses: Remarks on Criteria for Diagnosis and on Future Immunologic Methods of Prophylaxis." (Lantern Demonstration.)

Marcus R. Caro: Opened discussion on paper by J. W. Tedder, New Orleans, on subject: "The Toxic Skin Manifestations Following Sulfanilamide Therapy." (Lantern Demonstration.)

Norman W. Roome: "The Visualization of the Adrenal Glands by Air Injection." (Lantern Demonstration.)

Philip Lewin: "Newer Concepts and Methods of Teaching Orthopedic Surgery." (Lantern and Motion Picture Demonstration.)

Edward L. Compere: Opened Discussion on paper by Charles F. Nelson, Beverly Hills, Calif., on "Factors to Be Considered in Bone Metabolism with Suggestions as to the Clinical Value of Vitamin D and Parathyroid Extract." (Lantern Demonstration.)

Harry E. Mock: Opened Discussion on paper by Walter G. Stern, Cleveland, on "Estimation of Disability After Injury." (Lantern Demonstration.)

Andrew C. Ivy: "The Effect of Smoking on the Activities of the Alimentary Tract." (Lantern Demonstration.)

Leo L. Hardt and John S. Coulter: "Studies on Treatment in Intestinal Tuberculosis." (Lantern Demonstration.)

Frederic E. Templeton and A. W. Marcovich: "The Value of Roentgenologic Demonstration of the Crater in Duodenal Ulcer." (Lantern Demonstration.)

Justin J. Stein, Hines, Ill.: "Apical Lung Tumors." (Lantern Demonstration.)

OUR SICK SHOULD BE CARED FOR BY PHYSICIANS, NOT BY SCHEMING POLITICIANS

America, June 25, 1938, has the following to say about political physicians: From England comes the story of a physician, appointed by the Ministry of Health under the "panel" plan, who smoked a cigarette at the bedside of a dying woman. On leaving, he demanded that the husband pay him two shillings six-pence for cab-fare. Incidentally, what he had diagnosed as cancer was, in fact, pneumonia.

We do not know whether this is a fair specimen of the manner in which socialized medicine works out in Great Britain. But the case sums up the apprehension of many in the profession and of the laity that it would probably work out in exactly this fashion (although on a larger scale) were it established in the United States.

As Dr. Irvin Abell, president of the American Medical Association for 1938-1939, reported at the Association's convention in San Francisco last week, we shall do well to examine with care those "socially-minded statesmen who would supply medical care at Government expense." The scheme promises much, especially to those in the low-income groups, but it may be accompanied, thinks Dr. Abell, by "a lowering of the efficiency, and perchance integrity, of part of the medical profession."

Members of the profession who oppose socialized medicine fear, as far as we can gather their position, that it will destroy the personal relationship which should exist between the physician and the patient, and that it will check medical progress. The physician in private practice knows that his success depends in very large part upon his assidulous care of his patient, and upon what the older physicians used to call "his bed-side manner," which simply meant his ability to inspire the sick man with confidence. About these points, the government-paid physician need not greatly care, for whatever happens to the patient his practice and his fee are assured.

We have suffered so much from the dead hand of bureaucracy in this country that the suspicion and distrust of the average physician whenever socialized medicine is mentioned can be easily understood. In our opinion, the suspicion and the distrust are well-founded. Certainly, the profession must cooperate with every agency in the community to supply adequate medical care for all and especially for the poor. But it must not be taken for granted that the best way, or the only way, of providing this needed care is through medical stations subsidized and controlled by the Government.

What bureaucracy can do when its blight falls upon any human problem with which the Government must deal, can be seen today in the administration of the WPA and similar Federal and State organizations for the relief of the needy. We shudder to think that a physician might be appointed not because of his ability to serve suffering humanity, but because of his skill in bringing out the votes at the last election. Our sick should be cared for by physicians, not by scheming politicians. Here is not the least serious of the problems to be solved by the advocates of socialized medicine.

THE YEN FOR MORE POWER — AND MORE TAX MONEY IS RUINING AMERICA

Merle Thorpe, in the August number of *"Nation's Business"* has the following comment on taxes, our number one problem. We quote in part:

While we are not certain of many things in this life, of this we are sure. When a nation expends the results of its labor in non-wealth producing enterprises through political agencies rather than in the development of new industries through the imagination and courage of its individual citizens, there can be no progress. Political spending makes for temporary employment of men; the other for continuous and increased employment of men.

Eighteen of the new industries developed here in the 50 years ending in 1930 employ today 9,000,000 men and women, nearly one-fourth of the total employed. The deflection of the people's savings from industrial ventures to political spending since 1930 has not added a single man or woman to a wealth-producing pay roll. During this period there have been a million men and women, exclusive of those on relief, added to political pay rolls. But this employment is overhead, not income producing.

It is the fashion today to speak slightingly of the founders of this government. It may be that our horse-and-buggy leaders were dumb, that they were just ordinary men. If that be so, they builded better than they knew. For they gave us little government and little government expense, leaving with the people a large percentage of earnings which voluntarily adventured into a thousand fields, under the stimulation of enterprisers, who in turn were "given every stimulus."

Little government expense meant little government meddling by bureaucrats. Little government expense did not permit Congress to pass on its law-making job, as by a Detroit assembly line, to bureaus, boards, commissions and authorities, all eager for more power—and more tax-money.

Our American manufacturer-author might paraphrase his British cousin of 100 years ago: America cannot hope to regain its industrial stride under the present immense burden of taxation.

MEDICAL ECONOMICS

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The sequence of events since Senator Lewis of Illinois addressed the House of Delegates at the 1937 annual meeting at Atlantic City have verified the fact that he knew whereof he spoke and that planning affecting the medical profession was going on at Washington amongst the reformers. The multiplicity of articles in the lay press, as well as the criticism of the officers of the American Medical Association by special groups, such as the Committee of 430, have kept the spot light of criticism levelled on the medical profession. Then the Health Insurance plan of the HOLC, subsidized in part by government funds, showed that thought and planning were occurring with the sanction of the officials in Washington. All this should have brought home to the rank and file of the medical profession that the future of their profession was in jeopardy. But as usual most of us were too busy to give much time to the consideration of what was to be tried.

A surprisingly large per cent of the time of the House of Delegates at the last annual convention of the Association held in San Francisco in June was given to consideration of these problems, as all of you who follow the proceedings in the JOURNAL are well aware. But it left to a paper delivered to the House of Delegates by Dr. V. F. Draper, prepared by the Chairman of the Federated Departmental Committee to Coordinate Health and Welfare Activities, Miss Josephine Roche, to give official sanction to the fact that there was definite planning under way at Washington to regulate the care of the sick. The officers of the American Medical Association were invited to attend "A National Health Conference" at Washington on July 18, 1938, to discuss the problem. Although the address referred to was presented in executive session of the House it was released in Washington at the same time and was in the evening paper as soon as the House adjourned. The comments of the press were interesting and not all favorable to the medical profession. Particularly interesting was a special article in the same paper reporting a speech made at Washington the same day by Mrs. Eleanor Roosevelt at a national 4H Club Camp, in which she was quoted as saying: "Socialized medicine is a new movement in medicine that is vital to the health and welfare of rural America. Some of you have heard vagnely about socialized medicine and health insurance, but many communities are prone to look on it as an experiment and say, 'we don't want any experiments tried on us.' If you think any experiment might help your community, do all you can to have it tried." The appearance of this speech in the same paper as the article by Miss Roche is a peculiar coincidence and shows a real cooperation and mutual understanding at Washington.

In the midst of all the comment on and criticism of the medical profession and the future of medical care in the United States, which appeared daily in the San Francisco press, and we must be just and admit that the criticisms were in the most part fair, it was refreshing to find tucked away in the columns of the *San Francisco Chronicle* the following: "Editor: Looking ba k through the years. I remember with gratitude and affection the kind doctors and surgeons who ministered to me and mine. They hardly realize what a place they have in our hearts—these members of the noblest profession of all. In my childhood days in Canada, they came when called through deep snow and winter cold. They respond to the call of the sick poor and help their patients regardless of whether they can pay or not. It is extremely interesting to read the reports of all that has been done by the medical profession as reported in accounts of the convention in San Francisco." —Madelon De Roche Saxon, Mill Valley. That shows there still remain those who are satisfied with the attempts of the medical profession to

care for the sick of this nation regardless of their status in life. It is encouraging to those of us who are opposed to governmental control of the medical profession.

The writer was in Vancouver, British Columbia, during the sixth Canadian Conference of Social Workers. Here as usual the speakers dealt at length with the number of people unable to pay for medical care, and the high cost of medical care, and ended up by insisting that the only solution of the problem was governmental control. It was interesting to note that the main speakers and critics were a consulting actuary of an insurance company and a professor from the University of California, neither of whom was a physician.

Reports of the Annual Health Conference held at Washington on July 18 under the Chairmanship of Miss Josephine Roche, assistant secretary of the U. S. Treasury, above referred to have been fragmentary at the time this article is written. A few articles have appeared in the lay press and from them it appears that there was a decided difference of opinion as to the success of the proposed plan. We hope to have permission to reprint an article appearing in the *United States News* of July 25 on this subject, before the date this is submitted to the printer. It is the best article the writer has found on the Conference and coming from the pen of a lay writer should make a definite impression on every reader. Please read it carefully and think over what it means to the medical profession if the proposed innovations are started at this time. Success in one attempt will lead inevitably to another.

The Chairman of the Legislative Committee is to be congratulated on the fact that little of damage to the medical profession was passed at the special meeting of the legislature of the State of Illinois, free hospitals for the care of persons suffering from venereal disease would mean that similar arrangement would be demanded for cancer, heart disease and every other common disease. Every member should read the final report of the Chairman of this Committee, Dr. John Neal of Springfield.

The President of the Illinois State Medical Society has a short article in the column this month on the subject "Postgraduate Courses." This is a subject in which Dr. Munson has been interested for many years. Undoubtedly his plan will be presented to the Council of the Illinois State Medical Society at a future meeting. Read it over and let your Councilor know if you are interested in it.

E. S. Hamilton,
Chairman.

POSTGRADUATE COURSE

During the coming year it is our purpose to continue the refresher or postgraduate courses downstate in Obstetrics and Pediatrics.

In connection with this, there is a very definite sentiment downstate, particularly with the young and middle-aged men in the practice of medicine for a widening of this postgraduate instruction to include some of the other branches of medicine. This is now being carried out very satisfactorily in some of the other states.

It is found that a small per cent of practitioners and only at very infrequent intervals, take time away from their practice and the expense which is incurred in postgraduate work. The reasons given for failure to engage in postgraduate study for practitioners generally is the inaccessibility of the courses convenient to their homes, and an insufficiently wide range of subjects to be of benefit to the general man.

As stated before the loss of income on account of leaving their practice for the length of time involved, the lack of practicability in the appeal of the programs offered, and a definite indifference on the part of some of the medical men on account of lack of stimulation and medical contact, are other reasons for the inability of practitioners to take postgraduate work away from home.

These courses should be planned to be of suitable length and practicability of subjects that are met with by the general man every day and yet to include all the variation in change of methods of management and treatment of such diseases. The probable cost to the practitioners is arranged in most of the states to be without cost, and in others a small fee is charged for matriculation. As arranged for the refresher courses last year, these could be presented in each district at the most accessible point.

It has been fully agreed that the science and art of medicine cannot be brought to its fullest accomplishment in the undergraduate program of study. Undergraduate training and knowledge necessarily develops with practice and ex-

perience. But if the man in general practice is to maintain a reasonable knowledge of the advancement of medicine and its application to everyday practice, he must continue to have the opportunity for educational and clinical instruction.

The postgraduate work is referred to as a course in teaching to help the practitioner, particularly in general medicine to achieve the reasonable ability to use the now known medical knowledge in his every day practice. Graduate medicine is defined to prepare those physicians for teaching and research by longer courses of study. The postgraduate program offers the necessary educational opportunity to maintain the specialist at a desirable level of efficiency.

Special societies in medicine and surgery give one an opportunity yearly or bi-yearly to evaluate these advances that are made in medicine, and with postgraduate or direct application of these methods, keeps a small per cent particularly of instructors and teachers, fully in touch with new ideas of medical advancement.

In 1934 the Michigan State Medical Society made a study by a series of questions to determine the amount of postgraduate work done by practitioners of medicine. Of the 439 replies received from practitioners, 29% had engaged in postgraduate study for a period of a month or less in ten years; 40% had attended less than six medical meetings, and 15% had attended none.

The reasons given here as I mentioned before were: Cost, loss of time away from home, and inaccessibility.

This work will in no way interfere with the work of the Educational Committee of the State Society, any more than the refresher courses that were given by the State last year in Obstetrics and Pediatrics. In fact it will only prepare the practitioner for a better understanding of the talks, lectures and discussions given by men sent out by the Scientific Service Committee in a general way throughout the year.

If a postgraduate medical school is to be established in a teaching center it will in no way conflict with the plan of postgraduate work to be carried to the physician throughout the State, but will only stimulate the interest and attendance of the postgraduate school and prepare the stuff, by practice and experience to furnish the instructors for these extramural postgraduate courses throughout the State.

Quoting James D. Bruce of the Medical Department, University of Michigan: "Each community should be as nearly as possible a self-sufficient center of medical service, and to this end a postgraduate teaching program must permit attendance with a minimum loss of time and at a minimum expense."

In these postgraduate courses, some of the things emphasized by the State Board of Health for special consideration are the management and treatment of syphilis in all its stages, particularly as emphasized in the present campaign on syphilis, as well as the typing of pneumonia and serum treatment.

SAMUEL E. MUNSON.

Correspondence

MATERNAL WELFARE COMMITTEE

The Council of the Illinois State Medical Society decided at the recent organization meeting that the Maternal Welfare Committee of the Illinois State Medical Society should continue intact. They were very well pleased with the progress of the program to date. The activity was very slight in certain counties. Perhaps this has been due to the haste of early organization where men selected as County Chairmen were too busy to devote sufficient time to popularizing the county program. It is hoped that where this condition exists that the officers of the county medical societies will assist in selecting a man who will be active and attempt to handle this situation in his own county.

The report of the chairman to the House of Delegates will be sent to each medical society to be read. Also, being the beginning of a new year, the local society will be asked to select a new county chairman for the ensuing year.

District meetings will be continued beginning the early part of September in order that the new county chairman may receive instruction on the program and new problems which are constantly arising may be discussed.

This Committee has been asked to prepare a "Minimum Standards for Hospitals Rendering Obstetrical Care." These plans have been drafted and will be presented to the Governor's Advisory Committee for approval.

The registration at the summer courses is good but it is below what had been hoped for. These courses, because of the minimum cost, should be an incentive to physicians throughout the state to register if possible.

T. B. Williamson, M. D.,
Chairman.
John F. Carey, M. D.,
Secretary.

THE AMERICAN MEDICAL ASSOCIATION MAKES A SURVEY

Chicago, Illinois.

To the Editor: The American Medical Association has asked the state and county societies to make a survey of the entire country to determine the needs for and the cost of medical care. Two questions are to be answered by this survey. Is there any community not sufficiently supplied with physicians? Is there any community where the poor are unable to obtain medical care? If these needs exist, it will become the duty of the state and county societies to discover means to supply physicians and other medical care for the relief of those needs. Questionnaires will be sent to physicians, dentists, health departments, colleges, nurses, charitable organizations and employers of labor.

When the American Medical Association was founded in 1847 the population of the United States was approximately twenty million people. There were few, if any, corporations. Industrial concerns as we know them today did not exist and a large part of the population lived on farms and earned enough to support their simple wants. The poor and helpless were for the most part taken care of by their families and friends and comparatively few became public charges. Medical schools were few in number and the required time of attendance before graduation was a minimum of two terms of six months each. At that time students who could afford to do so went to Edinburg or Paris for their medical education.

With the founding of the American Medical Association, medical education in the United States moved forward until it surpassed that of Europe. Better education for medical students and doctors was the chief aim of the Association. At that time economic problems for doctors did not exist. The cost of medical care was an unheard of problem. Nursing was done by the family of the patient, supplemented by willing neighbors. There was no charge for this service. The number of the doctor's visits was governed by the gravity of the case and he was paid in currency or merchandise for his visits. In the farming communities he often took his pay in the form of farm produce, and in both town and county were added the gratitude of the patient and family. It is of interest to note that as the ability of the doctors to give better service increased, the pay increased in spots but the gratitude of the city public universally diminished.

Until comparatively recently the American Medical Association did not concern itself with the economic problems of the family physician. Its chief concern was, very properly, better doctors, better diagnosis, better remedies and better hospitals. With increase in medical education came control of the diseases that had been the main support of the doctor. In Chicago there are doctors who never saw a case of typhoid fever and thousands who were never called to treat a case of typhoid fever. As the doctor's knowledge progressed his demand for better nursing became urgent and that most important aid in the care of the sick, the trained nurse, caused the first jump in the cost of medical care. With the advent of modern surgery and modern medicine, hospitalization became the order of the day. Laboratory methods became a necessary diagnostic measure and technicians became as great a necessity as nurses. Expensive machines for diagnosis and treatment further pyramided the cost of illness.

Then into the field came the social worker, an added expense to the care of the sick. That was the straw that broke the camel's back and a goodly part of the burden was shifted to the backs of taxpayers and the employers. The Workman's Compensation Law brought free medical service to the employe.

The next thing in the evolution of medicine was teaching the public to believe that the pauper was entitled to the same type of medical care as that given to the millionaire and a large part of the public believe this to be the case. Then said the middle class, "If this is so, what about us? We cannot pay millionaire fees, so the wise thing for us to do is to take our babies to the infant welfare stations and take ourselves to the

free and part pay clinics." In spite of the great progress that has been made in American Medicine somebody charged that our obstetrics are bad and this country is not a safe place for a woman to have a baby. Now comes the statement that the public is not adequately supplied with doctors.

A number of physicians, some of whom practice medicine as an avocation, are now telling the public that it can no longer afford to depend upon private practitioners but for safety all must go to medical centers where they can be cared for by specialists and the burden of cost for the poor and the middle class must be borne by the state in some form of health insurance. In this campaign the doctor of independent means is joined by a number of young physicians who want the seeming security of a government job, regular hours, light work, and hoped for large salaries.

In order to find, if possible, a correct answer to the charge that the American public is not getting sufficient medical care, the American Medical Association is making this survey that will ask for information from physicians, hospitals, nurses, social workers, charitable organizations, dentists and employers of labor. This survey is being undertaken with an open mind and will be of as much value to the business man and other citizens as it is to the medical profession. In view of the way business has been taxed and harrassed for reports it is not unlikely that businessmen may be a little reluctant to meet with the request of the American Medical Association which, of course, cannot command their compliance as can the government. It will be part of the doctor's duty to promptly fill in and return his own questionnaire and in addition explain to his business friends the value of promptly complying with the request of the American Medical Association in this much needed survey.

EMMET KEATING.

BARTERING IN MEDICINE

Urbana, Illinois, July 25, 1938.

To The Editor:

The object of this comment is to call the attention of the local profession to a practice that has crept into the field of medical practice in Champaign County. I refer to the commercialization of medicine by certain ambitious practitioners who are evidently desirous of monopolizing the referred or consultation work of young physicians entering upon practice in the smaller country towns.

The method as it has been brought to my attention is somewhat as follows:

A vacancy in practice occurs in one of the outlying towns by death or removal of the local physician. The ambitious M. D. in question, eager to clinch the referred work from that town, anticipates the other fellow and perhaps the undertaker by having some young, well equipped M. D., as yet unschooled in medical ethics, advised of the situation and on the grounds ahead of others who may have this location in view. This at once smacks of the unethical practice of fee-splitting.

Such a plan deprives a community of its right to have its doctor free and unbiased in his judgment and in his practice among them; and also of their right of choice of a consultant in case of serious illness in a family, requiring consultation. I have known personally of a number of illustrations bearing out this undesirable feature of such practice. The people in question complaining that they had asked for their choice of consultants, but were told by the local physician that arrangements had been made to have Dr. So and So to consult or operate as the case required. Doubtless many of you can cite such instances. That such methods are hurtful to medicine requires no argument.

The young man entering upon practice under such circumstances is inexperienced in practice and medical ethics and is apt to receive a certain blight unconsciously from this sort of an alliance. Commercialization of this or any other type in medicine is not conducive to that broad and humane development of the young physician establishing himself in a community.

In other words it is wrong for a community to be deprived of its privilege of choice of who shall serve them in matters so important as serious illness in their homes and it is also apt to prove hurtful to the young physician whose unbiased development and finer medical judgment are endangered by such practice. It would therefore seem that such methods of practice are dangerously near if not entirely unethical.

JAMES S. MASON, M. D.

FINAL LEGISLATIVE BULLETIN

1st and 2nd Special Sessions, 60th General Assembly, 1938

With bitter acrimony freely and eloquently proclaimed by factional leaders in House and Senate as a closing malediction, the first and second special sessions of the Sixtieth General Assembly simultaneously ended sine die in the small hours of the night of June 30th. In spite of an eleventh hour rally toward party harmony, many members of both chambers went home smarting from the verbal salt that was poured without stint into the political wounds of all and sundry.

Rarely if ever before has so much bitterness, factional strife, heroic efforts at compromise, high pressure lobbying and confusion characterized a session of the Illinois Legislature. Under these circumstances almost anything might have happened. Indeed the legality of some of the more important bills that passed has been questioned by the Attorney General to whom all bills passed by the General Assembly are referred by the Governor for an opinion as to constitutionality.

Victory for Sanity as Venereal Disease Bill Fails. Amid this confusion, Senate Bill No. 22, which would have opened the doors to State medicine and which seemed sure of passage, was ignobly defeated on the eve of adjournment by the alertness and vigorous efforts of the Illinois Medical Society. This Bill would have permitted communities to levy a tax, set up an organization and build hospitals for the *FREE* treatment of any and all patients suffering from venereal diseases. *Section* 4 of the Bill provides that

"Persons afflicted with venereal diseases, inhabitants of any such city or village, shall be treated free. Said treatments and prevention activities connected therewith shall be given and carried out under the supervision of physicians and *others employed* under authority of this Act."

The intent was plainly to employ physicians as municipal office holders to engage in regimented medical practice. It would have established, moreover, another independent taxing agency and multiplied the number of official agencies operating in the field of medicine. Good public health administration requires the consolidation and unification rather than the diversification and multiplication of activities. Carried to a logical conclusion, the principles in Senate Bill No. 22 would ultimately create independent official agencies to combat cancer, rheumatism, heart disease, nephritis, etc.; in short State medicine under a patently wasteful administrative system.

The history of Senate Bill No. 22 in the Legislature showed evidence of powerful lobby support. It was introduced without advice or consultation from State public health officials or representatives of the State Medical Society, passed the Senate without a committee hearing, was referred to the House Committee on Public Welfare instead of on the Judiciary as would properly have been done, was approved for passage by the committee on Public Welfare without a public hearing and reached the stage of *second reading* after a factional compromise agreement in the House which greatly favored the passage of all bills that had reached *second reading*.

Energetic action by the members of the Medical Society at this stage flooded the House members with wire communications from physicians throughout the State and caused defeat by a favorable vote on a motion to *"strike out the enacting clause."* This victory was achieved in the face of desperate efforts by the proponents of the Bill, expressed in a telegram signed by Dr. Louis E. Schmidt, and sent simultaneously to all House members. This telegram read as follows:

"Hon. ————, care of House of Representatives, Springfield, Ill. Senate Bill 22 for control prevention and treatment of venereal disease is of greatest importance to health of citizens of Illinois. An untold amount of suffering, sickness and misery results from these diseases and adds a great financial burden to State for keep of afflicted persons in institutions. This bill if enacted will do a great detal to alleviate suffering of those so afflicted. In interest of humanity I beg of you that when this bill is brought before your honorable body you vote for its passage so people of municipalities may have opportunity to express their wishes at a referendum. (Signed) Louis E. Schmidt."

Success against this pernicious Bill demonstrated afresh and in no uncertain terms that the medical profession of Illinois, so long as its attitude is sound and rational and in the public interests as it has been in the past, can exercise a powerful and determining influence over the course of legislative matters in medical affairs. A generally uniform attitude with respect to principles, militant and concerted action and constant alertness at Springfield make up the political prescription for the preservation of a healthy medical profession and the high standards of practice which the public interests require.

Other Bills. Of special interest was House Bill 47 which significantly eliminated the *"professions"* from a proposed occupational tax on personal services not now covered by the sales tax. While this Bill failed of passage the exclusion of *"professions"* from its provisions represents a substantial gain in the attitude of the Legislature toward physicians in particular. A measure that gained favor in the regular session of the 60th General Assembly, SB 392, would have imposed a tax of one-third of one per cent on gross incomes, including those of physicians. This was fought vigorously at the time by the medical profession through your Legislative Committee.

In opposing such tax levies the medical profession has no desire to shirk its full share of the public burden. Physicians are subject to the Federal income tax, they give generously of their time and talent to the poor among their patients and they provide medical care at greatly reduced fees to the impoverished who are eligible for medical care at public expense. So long as this situation prevails it is felt that new taxes on physicians would be out of line.

Bills Passed. A *drivers license* bill which conforms in principle to the uniform law recommended by safety organizations was passed at the last minute after a superficial factional agreement. In the confusion the Sen-

ate failed to vote on the appropriating section, leaving that portion of the law of doubtful legality. However, the law will not become effective until May 1, 1939, so that emergency appropriations in the next regular session are possible. Issuing licenses rests with the Secretary of State while examination for licenses is reposed in the State Highway Division, this being the basis of compromise. No examination is required of present drivers of legal age who obtain licenses prior to May 1, 1939, at 50 cents for 3 years.

SB 16 *and HB* 36 provide, respectively (1) for commitment to State institutions of sex offenders about to be released from penal servitude who are found upon examination to be either insane or feebleminded and (2) the commitment and detention of criminal sexual psychopathic persons.

HB 26 enables counties of less than 500,000 operating tuberculosis sanitariums under the law to issue bonds for constructing or improving a county tuberculosis sanitarium.

SB 37, 38 *and* 39 relate to housing projects and aim at providing for the acceptance of Federal funds for that purpose. They were supposed to apply only to an area of Chicago but appear to carry a "joker" clause that applies to downstate cities also.

SB 53 authorizes Illinois municipalities to accept Federal grants and loans for public work projects.

HB 80 appropriates $1,000,000 and creates a State Board of Education to apportion these equalization funds so that certain public schools may operate on a higher standard next year.

HB 4 gives State Department of Public Welfare authority over selection of county superintendents of public welfare.

Several bills providing for the financing of relief by diverting gas tax funds, appropriating available money in the treasury and extending the 3 per cent sales tax were enacted. The Emergency Relief Administration was given a degree of supervision over expenditures of funds locally.

Legislative Outlook. Although some of the most important legislation embraced in the call for the special sessions failed—especially that relating to a constitutional convention and reform of the State's public educational system, it is unlikely that another special session will be called this year. In view of factional strife, another special session prior to the November election would be poor political strategy. The imperative financial needs for the remainder of the year have been provided. After the November election, only an urgent emergency would justify a special session since the next regular session will meet in January.

Probably most of the medical legislative problems will be opened again, old wine in new bottles perhaps, when the regular session convenes.

Mather Pfeiffenberger, M. D.,
M. J. Hubeny, M. D.,
John R. Neal, M. D., Chairman,
Legislative Committee.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

Officers for 1938-1939

President—Mrs. William Raim, 178 N. Euclid Ave., Oak Park.

President Elect—Mrs. Charles C. Winning, 763 Vogel Place, East St. Louis.

1st Vice Pres.—Mrs. John A. Cousins, 5844 Stony Island Ave., Chicago.

2nd Vice Pres.—Mrs. Harold Swanberg, 1680 Main St., Quincy, Ill.

3rd Vice Pres.—Mrs. Corwin S. Mayes, 1706 Noble Ave., Springfield, Ill.

Corresponding Sec.—Mrs. Reid Owen Howser, 304 N. Lombard, Oak Park, Ill.

Recording Sec.—Mrs. Elven J. Berkheiser, 421 Melrose St., Chicago.

Treasurer—Mrs. E. C. Beatty, 621 Lincoln, Pontiac, Illinois.

Standing Committees

Organization—Mrs. Charles C. Winning, 763 Vogel Place, East St. Louis.

Press and Publicity—Mrs. C. Otis Smith, 1012 Pleasant St., Oak Park, Ill.

Legislation—Mrs. Corwin S. Mayes, 1706 Noble St., Springfield.

Program—Mrs. C. C. Kane, 8521 State St., East St. Louis.

Revisions—Mrs. R. K. Packard, 6901 Paxton Ave., Chicago.

Printing—Mrs. Homer O. Dolley, 304 E. Empire St., Bloomington, Ill.

Public Relations—Mrs. Charles Segal, 5217 Greenwood Ave., Chicago.

Archives—Mrs. F. L. Heck, 1425 Juneway Terrace, Chicago.

Finance—Mrs. F. P. Hammond, 6020 Drexel Ave., Chicago.

Hygeia—Mrs. A. Gareiss, 6032 S. Whipple St., Chicago.

Hostess—Mrs. A. H. Brumback, 1503 Jackson Blvd., Chicago.

Benevolence—Mrs. Herbert B. Henkel, 2135 Wiggins Ave., Springfield.

Parliamentarian—Mrs. Clarence G. Goodwin, 2629 E. 74th St., Chicago.

Councilors

1st District—Mrs. A. E. McCornack, 265 Hamilton Ave., Elgin.

2nd District—Mrs. C. R. Bates, Ladd, Ill.

3rd District—Mrs. J. P. Simonds, 25 E. Walton St., Chicago; Mrs. A. H. Brumback, 1503 W. Jackson St., Chicago; Mrs. Lucius Cole, 1117 Lathrop Ave., River Forest.

4th District—Mrs. Kenneth C. Baker, 1225 N. Cherry St., Galesburg.

5th District—Mrs. Harry Otten, 1417 Park Ave., Springfield, Ill.

6th District—Mrs. Walter Whitaker, Main St., Quincy, Ill.

7th District—Mrs. Thos. D. Laney, 2111 Main St., Salem, Ill.

8th District—Mrs. Gerry Brown Dudley, Charleston, Ill.

9th District—Mrs. E. W. Burroughs, 129 W. College, Harrisburg, Ill.

10th District—Mrs. Henry H. Hurd, 1360 N. 42nd St., East St. Louis, Ill.

11th District—Mrs. V. M. Seron, 1806 N. Williams St., Joliet, Ill.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

Report of the Convention of the Woman's Auxiliary to The American Medical Association

It is indeed inspiring to attend a National Convention. By so doing we realize the actual scope of our work—that it is not limited to our own immediate circle, but is truly national in character. There are forty-one (41) states organized with a total membership of 20,203. The registration at the convention was 1,184. The Illinois representation consisted of Mrs. Rollo K. Packard and Mrs. James P. Simonds, members of the National Board, Mrs. A. M. Vaughn, Mrs. John R. Harger, Mrs. P. H. McNulty, Mrs. H. Close Hesseltine, Mrs. Edwin Hirsch, Mrs. F. E. Bollaert, Mrs. Herbert B. Henkel, delegates and Mrs. William Raim, State President. In addition there were a number who registered as guests.

Sunday afternoon, June 12, reverberations of the coming event were sounded in the lobby of the Fairmont Hotel as the first arrivals made their appearance and were greeted and registered. At 9 a. m. Monday morning Mrs. Augustus S. Kech, the president, called a meeting of the National Board. This was followed by an informal luncheon for Board members. In the afternoon there was a short Board meeting. Tuesday, as the formal opening of the Convention was at 9 A. M., at this time Mrs. Clifford A. Wright, President of the California State Auxiliary, gave the welcoming address. Mrs. Rollo K. Packard of Chicago responded to this welcome with very gracious words. The "In Memoriam" service followed. Mrs. Kech then gave her president's message and started with the business of the convention, which consisted of reports of officers and chairmen. At this session the Election Committee and Nominating Committee were appointed. Tuesday afternoon was left free. Wednesday morning the meeting reconvened and at this time the State presidents gave their most interesting reports. We were very happy that Mrs. Herbert B. Henkel, our past State President, was there to read her report, a report which we felt did credit to Illinois and exemplified the effort which Mrs. Henkel had put forth in the past year. Then followed the report of the Nominating Committee and it certainly was a tribute to the sterling qualities of our own Mrs. Packard that she was selected as President-Elect without a dissenting vote. Mrs. James F. Percy of California installed the new officers. Her apt phrases and knowledge of the proper thing to say at the right time made this a very outstanding ceremony. Wednesday afternoon was devoted to a combined Program and Public Relations Conference at which time Dr. W. W. Bauer and Mrs. A. Haines Lippincott spoke.

The keynote of the Convention and the keynote for the year's work was struck by Mrs. Augustus S. Kech when she introduced the following resolution:

Whereas, There is much propaganda in the daily press and in lay periodicals and magazines concerning the socialization of medicine;

Whereas, It is one of the duties of members of the Auxiliary to bring to the lay public the answer of the medical profession to the misleading statements which such propaganda contains;

Whereas, In order to perform this duty intelligently the members of the Auxiliary must themselves be informed of the viewpoint of the medical profession; and

Whereas, Such information can best be given to the members of the Auxiliary by their medical advisors and by reading the sections devoted to Medical Economics in the State Medical Journals and in the organization section of the Journal of the American Medical Association;

Therefore, Be It Resolved, That in accordance with the repeated suggestion of Dr. Irvin Abell, president-elect of the American Medical Association, that the Woman's Auxiliary to the American Medical Association recommends to and urges upon the presidents of auxiliaries to State Medical Societies the organization in all county auxiliaries of study groups to be concerned with the dissemination of accurate knowledge concerning the harmful effects of present social and economic movements upon the practice of medicine.

To make this a very happy and enjoyable affair as well as a business one the ladies of California had evidently worked long and zealously. They even had got on the right side of the weather man as the sunshine and clear blue skies made San Francisco a lovely place indeed, a place where we would have liked to tarry for a longer time than the period of the convention. Monday afternoon we were given the choice of two sight-seeing trips around San Francisco, one taking in the city and the other out to the University of California where the Alameda County Woman's Auxiliary were hostesses at a lovely tea at International House. To those athletically inclined were given the privileges of golf, tennis, horseback riding and swimming. In the evening a Chinese dinner and a trip through San Francisco's well known Chinatown was arranged.

Tuesday's activities started with a Southern breakfast honoring Mrs. Kech. At this time Doctors J. H. J. Upham, President of the American Medical Association; Irvin Abell, President-Elect of the American Medical Association, and A. T. McCormick of Louisville, Kentucky, were introduced and each gave a brief, interesting talk. At 12:30 P. M. we were taken by boat to Treasure Island, the site of the San Francisco Fair in 1939, where a buffet luncheon had been arranged. Tuesday evening was left free in order that the ladies could attend the opening of the General Session of the American Medical Association at the Memorial Opera House, Civic Center, if they so desired.

We looked forward to Wednesday's luncheon with a great deal of anticipation, because of its intriguing title,

"The Aloha Luncheon." This luncheon was in honor of Mrs. Charles Tomlinson, the President-Elect, and presided over by Mrs. Kech. Dr. Walter Donaldson and Dr. Irvin Abell were the guest speakers. Dr. Abell again expressed faith in the Auxiliary and his belief that the women can be an outstanding factor in aiding the cause of the medical profession. He strongly advocated the organization of study groups for the study of socialized medicine and problems confronting the physician of today. Then followed the beautiful lei ceremony and as the four past national presidents, Mrs. James F. Percy, Mrs. James Blake, Mrs. Robert E. Fitzgerald and Mrs. Augustus S. Kech (Mrs. Kech having just joined the ranks of the past presidents), were bedecked with the garlands of lovely natural flowers to the accompaniment of lovely Hawaiian music we could almost close our eyes and believe that we were in that land of romance and flowers.

Wednesday was fittingly closed by a fashion show and musicale at the San Francisco County Medical Society's building. This building is one of San Francisco's old historical homes and is a very imposing edifice located in one of the most exclusive sections of San Francisco. The beauty of the home was enhanced by the gorgeous flowers for which California is so justly famed and which had been in evidence all during the Convention.

Thursday we were again offered a choice of sight-seeing trips, either to Stanford University or to Muir Woods, one of California's famous Redwood Groves. From four to five P. M. a musicale was held in the Tapestry Room of the Fairmont Hotel.

The social activities of the Convention were climaxed by the "Bring Your Husband Dinner," followed by the American Medical Association President's Reception and Ball. Dr. and Mrs. Charles C. Tomlinson were presented with a lovely floral gift as this dinner, it being the occasion of their twenty-ninth anniversary. The speaker's table at this dinner is worthy of mention—decorated in white cala lilies and being one of the most beautiful I had ever seen.

Mrs. Kech is to be congratulated on the success of her convention which was largely due to her own able management and personal charm. We feel that in Mrs. Charles C. Tomlinson, our new national president, we have as equally an able leader and know that we will make great strides forward in the work we have set out to do.

Following is the list of the National officers, Directors and Committee Chairmen for the current year:

President—Mrs. Charles C. Tomlinson, Omaha, Nebraska.

President-Elect—Mrs. Rollo K. Packard, Chicago, Illinois.

First Vice-President—Mrs. Frank N. Haggard, San Antonio, Texas.

Second Vice-President—Mrs. David Thomas, Lockhaven, Pennsylvania.

Third Vice-President—Mrs. L. S. Merrill, Ogden, Utah.

Fourth Vice-President—Mrs. J. R. Westaby, Madison, South Dakota.

Treasurer—Mrs. E. E. Fisher, Portland, Oregon.

Recording Secretary—Mrs. J. C. Downing, Des Moines, Iowa.

One Year Directors—Mrs. August S. Kech, Altoona, Pennsylvania; Mrs. Carl Surran, Margate City, New Jersey; Mrs. John W. Burns, Cuero, Texas; Mrs. Leslie J. Paul, Salt Lake City, Utah.

Two Year Directors—Mrs. J. C. Geiger, San Francisco, California; Mrs. E. W. Veal, Jacksonville, Florida; Mrs. R. E. Mosiman, Seattle, Washington.

Archives—Mrs. Robert B. Homan, Texas.

Exhibits—Mrs. Ily R. Beir, New Jersey.

Finance—Mrs. James Blake, Minnesota.

Hygeia—Mrs. James D. Lester, Tennessee.

Legislation—Mrs. Arthur A. Herold, Arkansas.

Press and Publicity—Mrs. Jas. P. Simonds, Chicago, Illinois.

Printing and Supplies—Mrs. E. D. Lamb, Oregon.

Program—Mrs. V. E. Holcombe, West Virginia.

Public Relations—Mrs. Henry Raile, Utah.

Revisions—Mrs. James F. Percy, California.

Historian—(To be appointed by President.)

Parliamentarian—Mrs. Rogers N. Herbert.

Respectfully submitted,
(Mrs. William) Helen Raim,
President, Woman's Auxiliary to the
Illinois State Medical Society.

MISSISSIPPI VALLEY MEDICAL SOCIETY

Hannibal, Missouri, Meeting

The fourth annual meeting of the Mississippi Valley Medical Society will be held at the Hannibal-La Grange College, Hannibal, Missouri, September 28, 29 and 30. There will be 35 speakers and more than 50 lectures, clinical demonstrations, etc., the entire program being arranged to especially appeal to the general practitioner. Some features of the meeting are: An All-Chicago program the first day with 15 well-known teachers and clinicians participating; four short courses of instruction of four hours each as follows: (1) "Diagnosis of Cardiac Disease," by Dr. Chester M. Kurtz, Assistant Professor of Medicine, University of Wisconsin. (2) "Treatment of Common Fractures," by Dr. Arthur Steindler, Professor and Head of Department of Orthopedic Surgery, University of Iowa. (3) "Diagnosis and Treatment of Common Skin Diseases," by Dr. Cleveland J. White, Associate Professor of Dermatology, Northwestern University. (4) "Obstetrical Hemorrhages," by Dr. Frederick H. Falls, Professor and Head of Department of Obstetrics and Gynecology, University of Illinois, and Dr. William C. Danforth, Professor of Obstetrics and Gynecology, Northwestern University. Other guest speakers are Dr. I. S. Ravdin, Harrison Professor of Surgery, University of Pennsylvania; Dr. Karl Goldhamer, formerly Assistant Professor of Roentgenology, University of Vienna, etc. The annual banquet, September 29, will be addressed by Dr. Samuel E. Munson, President, Illinois State Medical Society; Dr. Dudley S. Conley, Immediate Past-President, Missouri State Medical Association; Dr. Edward M. Myers, Immediate Past-President, Iowa State Medical Society, and Governor Lloyd C. Stark, of Mis-

souri. There will be large technical and scientific exhibits. A complimentary Stag supper will be given on September 28. The meeting is open to all ethical physicians. Detailed program may be obtained from Dr. Harold Swanberg, Secretary, M. V. M. S., 209-224 W. C. U. Building, Quincy, Illinois.

RAILWAY SURGEONS TO MEET IN CHICAGO

Never before in the history of the Railway Surgeons have problems been so grave economically, or technique and treatment procedures of such import as they exist this year.

The 23rd annual meeting of the American Association of Railway Surgeons will be held at the Palmer House, Chicago, September 19th to 23rd, 1938.

This association includes members in practically every railroad company in the United States, as well as the separate group organizations, embracing railroad surgeons of the New York Central System; Southern Railway; Atlantic & West Point R. R.; Western Ry. of Alabama; Illinois Central System; Chicago Milwaukee, St. Paul & Pacific R. R.; Rock Island Lines; Chicago, Burlington & Quincy R. R.; Chicago and Northwestern R. R.; the Georgia Railway and other road associations.

An extremely interesting and highly profitable program has been arranged and all physicians and surgeons are invited to attend the sessions of this meeting as guests of the organization. There will be no registration fee to M.D. non-member guests.

In addition to the scientific exhibits, a technical show will be held, including the presentation of new equipment, advanced types of therapy, new pharmaceutical and biological products and the latest techniques in many branches of the profession.

A cordial invitation for you to attend is extended by Dr. Harvey Bartle, President of the Association. Complete program and information regarding the meeting and the exhibits may be secured by addressing Mr. A. G. Park, Convention Manager, the American Association of Railway Surgeons, Palmer House, Chicago, Illinois.

THE NEW AMERICAN MEDICAL DIRECTORY

Fresh from the press comes the fifteenth edition, dated 1938, of the American Medical Directory. It is a work embracing 2,565 pages and it stands supreme in its field as a storehouse of useful, accurate information. Among the data included are a complete analysis of the American Medical Association with a statement of its officers, its constitution and by-laws, and the various annual sessions which it has held. There is a detailed comparative statement of the numbers of physicians in the United States, its dependencies and Canada in all the previous editions of the Directory. The present edition lists 188,916 names, or 5,604 more than were in the Fourteenth Edition, issued in 1936. More than 100,000 changes have been made in the intervening two years, including 74,399 changes of address, the addition of 13,811 new physicians, and the removal of the names of 8,008 who have died.

Medical schools are listed, together with the essentials of an acceptable school and a concentrated history of all the medical schools in the country as well as graduate medical schools and foreign medical schools. There is an account of the National Board of Medical Examiners and a description of its work.

Repeated in this edition are the list of hospitals approved for training interns developed by the Council on Medical Education and Hospitals, together with the hospitals approved for residencies in the specialties, also the medical libraries, and the medical periodicals available in this country. There is a complete directory of national and interstate societies, and then classified lists of the members of special societies in various groups. Next come all the detailed data concerning each of the individual states, including late figures as to population, number of counties, the physicians, membership in the state medical society, the medical practice act of the state, health officers, officers of medical societies, and a directory of hospitals, sanatoriums and related institutions. Then for each state there is a listing by town or city of each physician, presenting at the same time all the data that have usually been included in the American Medical Directory.

The possession of this directory by any physician means that he has immediately available at his finger tips all the essential factual data concerning medicine and its practice in the United States ready for consultation with ease and facility and in a manner which no other similar work provides.

ROCKY MOUNTAIN SPOTTED FEVER INCREASES IN ILLINOIS

According to the *Bulletin* of the Department of Health Rocky Mountain spotted fever is on the increase. We quote:

To date this year 11 cases of Rocky Mountain spotted fever have been reported in Illinois against a total of 18 for all previous years. The infection of 1 of the 11 patients is known to have been imported from Florida, 4 were traced definitely to the bites of native Illinois ticks and the other six are believed to be of local origin. This evidence shows plainly that wood ticks, scientifically known as *dermacentors,* in Illinois have become infected and are spreading the disease to human beings. Of the 11 cases reported this year 4 occurred in Johnson county, 3 of these being in one family, and 1 each in Clay, Henry, Hamilton, McLean, Marshall, Morgan and Winnebago counties.

This evidence indicates that wood ticks distributed widely in Illinois are infected with the virus of Rocky Mountain spotted fever and are capable of communicating the infection to man. Symptoms of the disease in man develop after a lapse of from 2 to 14 days after a bite by an infected tick. Two of the cases reported this year have terminated fatally.

Ticks are usually infected from small wild animals, mostly rodents, and ticks in turn transmit the disease to man. The infection in ticks, moreover, can be transmitted from one generation to another.

Dangerous Tick Bites Avoidable. Dr. F. C. Bischopp, of the Bureau of Entomology and Plant Quarantine, Bulletin United States Department of Agriculture says, fear of the tick that carries Rocky Mountain spotted fever in the East need not keep people indoors. The tick's principal danger lies in its bite. Bites can be avoided by a few simple precautions. Dr. Bischopp emphasizes that failure to take precautions may have serious consequences. The East has an unusually large number of common dog, or wood, ticks this year—some being reported for the first time from vacant city lots. Even though only one in several hundred of these ticks may carry the fever virus, that one tick, which cannot be distinguished from the rest is an agent of death. No cure for Rocky Mountain spotted fever is known. Its mortality rate is one out of every five persons infected.

After passing the first part of its life as a small parasite on field mice, the tick waits in tall grass and underbrush for larger host animals. Cutting all grass and underbrush around houses and pathways, therefore, is one way to protect dogs and people from tick bites.

Keeping ticks from gorging themselves on the blood of dogs is another protective measure. A pair of forceps is all that is needed in removing ticks from dogs to which only a few have attached themselves. Dusting every five days with derris powder is necessary for dogs supporting a large number of ticks. Ticks should be handled with great care, Dr. Bishopp points out. Infection can be contracted by crushing a tick full of blood from an animal that has had the fever.

Boots laced up over trouser legs protect men walking through tick-infested areas, as ticks are usually picked up from grass or weeds close to the ground. Ticks always work their way upward before attaching themselves to their human host. The back of the neck and head are their favorite feeding places. Careful examination of heads, especially children's, at least twice a day, will reveal the presence of a tick in time to prevent a fatal bite. Examination of the whole body is necessary after exposure to ticks. An effective way to de-tick clothes is to place them in a vessel that can be tightly covered, and set on top of them a pan containing half a teacupful of carbon tetrachloride or carbon disulfide. A few hours of such fumigation kills the ticks.

"Don't wait for the doctor to remove a tick," Dr. Bishopp warns. The important thing is to get the tick off as soon as possible. Anyone can disinfect the bite and the surrounding tissues by inserting into the exact spot where the tick was attached a round toothpick that has been dipped in iodine and drilling it in slightly.

The American dog tick is widely distributed throughout the United States east of the Rocky Mountains, as well as in western and northern California and in parts of Oregon. It is most numerous along the eastern coast from Massachusetts to Florida, especially within a few miles of the shore. Both Texas and Florida have a great many ticks—also some inland areas. such as southern Iowa and parts of Wisconsin and Minnesota. Islands off the coast of Massachusetts are heavily infested with ticks, especially Martha's Vineyard, Nantucket and Naushon. Tick numbers fall off along the sea coast from Marion, Massachusetts, westward. The Narragansett Bay islands are rather heavily infested. A few ticks have been reported on the west side of that bay and as far west as Stonington, Connecticut. There are large numbers of ticks on Long Island, especially the eastern half, and along Chesapeake Bay in Maryland. They are rarely seen west of the Blue Ridge.

OCCUPATIONAL DISEASES

The Second Annual Symposium on Occupational Diseases of the Department of Industrial Medicine of the Northwestern University Medical School will be held on September 26 and 27, 1938, at Thorne Hall on the Chicago Campus.

The program will include papers on industrial disease education, the scope of the occupational disease research problem, traumatic neurosis, the health of the worker in the shop and at home, industrial plant surveys, industrial health and safety and the practicing physician, cardiovascular disease and peripheral vascular disease in the middle aged group of industrial workers.

At an evening session the subjects will be: the responsibility of labor, management and the community and morbidity and mortality statistics. The complete program will be published early in September.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination and review of case histories of Group B applicants by the American Board of Obstetrics and Gynecology, will be held in various cities of the United States and Canada on Saturday, November 5, 1938. Last date for applying is Sept. 5, 1938.

The next general examination for all candidates (Groups A and B) will be held in St. Louis, Missouri, in June, 1939, immediately prior to the American Medical Association meeting.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania. Applications for these examinations must be filed in the Secretary's Office not later than sixty days prior to the scheduled dates of examination.

AMERICAN CONGRESS OF PHYSICAL THERAPY

The 17th annual scientific and clinical session of the American Congress of Physical Therapy will be held cooperatively with the 22nd annual convention of the American Occupational Therapy Association, September 12, 13, 14 and 15, 1938, at the Palmer House, Chicago. Preceding these sessions, the Congress will conduct an intensive instruction seminar in physical therapy for physicians and technicians—September 7, 8, 9 and 10.

The convention proper will have numerous special program features, a variety of papers and addresses,

clinical conferences, round table talks, and extensive scientific and technical exhibits.

The instruction seminar should prove of unusual interest to everyone interested in the fundamentals and in the newer advances in physical therapy. The faculty will be comprised of experienced teachers and clinicians; every subject in the physical therapy field will be covered. Information concerning the convention and the instruction seminar may be obtained by addressing: The American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

IMPORTANCE OF RESTORATION OF BLOOD SUPPLY IN FRACTURES OF NECK OF FEMUR

Because of the possibility of an inadequate supply of blood, it is Fred H. Albee's, New York and Venice, Fla. (*Journal A. M. A.*, June 18, 1938), belief that the treatment of fractures of the neck of the femur is a special problem differing from that of all other fractures. A study reveals an unusual situation. The capsule of the hip joint is attached to the neck of the femur obliquely and close to the base of the neck, and therefore a subcapital or central fracture of the neck of the femur is completely intra-articular. If it is completely intra-articular, then all possible sources of blood supply coming to the fragment of the head from the trochanter region of the femur or distal to the joint are cut off. This being so, the ligamentum teres can be the only remaining source of blood supply. During the last twenty-five years the author has performed 413 reconstruction operations for nonunion with marked absorption of the femoral neck. He removed the head of the femur in each case. In more than 70 per cent of cases, all ligamentous tissue appeared to have been evulsed from the cotyloid notch; in the remaining cases tabs of ligamentous tissue were found attached to the cotyloid notch of the acetabulum and fovea of the head of the femur or both. He deduced that in the 411 cases of subcapital fracture the weak ligamentum teres was destroyed by torsion or rotation incident to the explosive displacement at the time of fracture. If this ligament has not been ruptured, there is every reason to believe that its continuity would serve to conduct induced collateral circulation to the capital fragment, even if anatomically the blood vessels were very meager in it. It is his firm belief that in those cases coming to nonunion the destruction of the ligamentum teres at the time of the facture is the determining factor in the prevention of union. In other words, one is justified in coming to the conclusion that, when the ligamentum teres is destroyed, under such conditions the capital fragment becomes practically a joint mouse. Because of the intervening joint cavity, no blood supply can come to it, as in other fractures from adherent overlying muscles or soft parts. The fracture is wholly within the hip joint with very little soft tissue at the point of the fracture other than the torn synovial membrane on the neck itself. Under such conditions, if union is to be secured, immediate action is urgent. With the fragments in good position, a bone-graft peg of at least one-half inch in diameter should be obtained, preferably from the crest of the tibia, and should be immediately inserted.

HEMOPTYSIS IN MALIGNANT HYDATID MOLE

Edgar R. Pund, Robert B. Greenblatt, Augusta, Ga., and Cleveland Thompson, Millen, Ga. (*Journal A. M. A.*, June 11, 1938), observed a case of invasive mole in while hemoptysis was a prominent feature. Roentgen studies of the chest revealed metastatic foci in the lungs. Following hysterectomy the metastatic pulmonary foci regressed and the patient recovered (without radiation therapy). The biologic hormone assay for gonadotropic substance in the urine was only 5,000 mouse units per liter before hysterectomy and 150 mouse units per liter three weeks after operation. These low hormonal values were in harmony with the regressive features of the neoplasm and were indicative of a hopeful prognosis. The hemoptyses in such cases are due to pulmonary deportation of villi or syncytial cell masses with transitory proliferation rather than true metastases. Removal of the primary focus, i. e., hysterectomy, should always be performed regardless of the seeming hopelessness of the situation.

VITAMIN A: PHYSIOLOGY AND PATHOLOGY

In discussing the physiology and pathology of vitamin A Otto A. Bessey and S. B. Wolbach, Boston (*Journal A. M. A.*, June 18, 1938), point out that vitamin. A is an essential part of the biochemical machinery of all vertebrates. It is a derivative of carotenoid pigments from plants. As far as is known, no vertebrate can synthesize carotenoids de novo. Probably all higher animals can convert certain carotenoids to vitamin A. The pathologic consequences of the deficiency are similar in man, monkeys, cattle, swine, dogs, rabbits, guinea pigs, rats, mice and fowls. For these and other reasons, facts about vitamin A learned from animal experiments are without doubt applicable to man. The specific pathologic changes of vitamin A deficiency are found in many epithelial structures and may be epitomized as follows: atrophy of the epithelium concerned, reparative proliferation of basal cells and differentiation of the new product into a stratified keratinizing epithelium. This replacement epithelium, regardless of the previous functions and structure of the region, is identical in all locations and comparable in all its layers with epidermis. Other consequences of vitamin A deficiency are common to other nutritional disturbances, including other vitamin deficiencies.

"Do you think your son will forget everything he learned in college?" asks Dr. Cutem.

"I hope so," replies Dr. Open; "he can't make a living necking."—*Temple Owl.*

Every year is "leap year" to the pedestrians.

Say it with brakes and save the flowers.

To avoid that run-down feeling, cross crossings cautiously.

Original Articles

TUMORS OF THE BREAST

IRVIN ABELL, M.D.,

LOUISVILLE, KY.

In 1915 after the late Dr. J. B. Murphy had been prosecuting a vigorous campaign for early operation in appendiceal inflammation he himself propounded the query if the time had not come to stop talking about appendicitis. In answering his own question he said: "No, it is just time to begin talking about appendicitis and talking most seriously and emphatically about it." A somewhat analogous situation exists regarding the significance of breast tumors. Nothing radically new has been brought out recently regarding them but the continued and repeated observation of instances in which there has been a woeful failure to appreciate their importance would strongly indicate the desirability of a further discussion of them. Evidence has not been lacking in our experience to show favorable results from the effort of the profession to educate both its own members and the laity regarding the import of breast tumors.

Of 192 operations done in our clinic before 1920, 112 were for malignant and 80 were for benign lesions; of 808 operations done since 1920 up to and including 1936, 335 were for malignant and 473 were for benign disorders. The preponderance, during the latter period, of operations done for benign conditions over those done for malignant ones is indicative of an increasing recognition of the potential dangers of breast tumors and of a more intensive effort to apply surgery that is both curative and preventive. In reporting the microscopic examination of the 1000 specimens the pathologist has made 1511 pathologic diagnoses. The two varieties of disease rather commonly noted in the same specimen consisted of tumor plus what we call for want of a better name, chronic mastitis or mazoplasia. The pathologic classifications afforded by the reports will not be discussed since the vitally important point to the surgeon and to the doctor is that every variety of breast tumor, with one or two exceptions, may be the starting point of malignancy and the essential knowledge desired from the pathologic report concerns the clinical characteristics of the neoplasm, whether frankly benign, definitely malignant, or on the borderline showing epithelial hyperplasia which may be regarded as a precancerous change. If one accepts the belief that all breast tumors should be removed, and I adhere to this view, such information will permit determination of the character and extent of operation based upon accurate knowledge of the significance of the lesion present.

The one benign neoplasm which carries no implication of malignant change is the lipoma, of which there were 18 in our series. They occur infrequently and present the characteristic lobulations and feel noted when in other locations. They have varied in size, ranging from small tumors with a diameter of one inch to those larger than the breast itself. In location they are subcutaneous, intramammary and retromammary, all in our series being of the subcutaneous type. They do not damage the breast tissue and simple removal suffices for their cure.

"Each lobe of the breast is contained in a capsule of fibrous tissue which sends in a fine network to support the lobules and acini of the gland, the interstices between the acini and between the different lobules and lobes being filled with adipose tissue. The sides of each lobe cannot be distinguished from its neighbor, with which it is intimately blended. The whole breast lies in the superficial fascia and is enclosed in a fibrous capsule, this capsule being continuous with the fibrous tissue which supports the different lobes. The breast is supported in the fascia by processes which pass from its capsule to attach it to the structures roundabout. These processes pass to the deep surface of the skin, called the suspensory ligaments, or the ligaments of Cooper, and the same kind of suspensory ligaments pass to the deep fascia covering the muscles which lie behind the breast." A knowledge of this distribution of fibrous tissue in the breast has a two-fold importance, first, in that involvement of it by certain tumors produces retraction of the nipple and dimpling of the skin constituting valuable evidence of the character of the tumor; and, second, in affording information as to the origin and physical attributes of the tumors originating in it. Pure fibromas are rarely found in the breast. Of our series of 553 benign lesions but 7 were microscopically identified as fibromata. They occur as a rule in young women,

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are hard, circumscribed and encapsulated, painless, of slow growth and may be multiple or single. While the absence of epithelial elements bespeaks their benignity, the impossibility of determining such absence without microscopic examination renders their routine removal imperative if one is to avoid the pitfalls and disasters which a waiting policy in the presence of apparently benign tumors not infrequently entails.

The fibroadenomas, consisting of both fibrous and glandular tissue are also encapsulated, of slow growth, practically painless and occur most usually in young women. These characteristics with their mobility, definite outline and occasional multiplicity are suggestive of their innocence. While usually single and involving but one breast they are not infrequently multiple and rarely both breasts simultaneously show such growth. One of our patients, a young married woman, presented three in the right and two in the left breast. At times such tumors become somewhat painful at or during the menstrual period as a result of the stimulated activity of the adenomatous tissue and may show an appreciable increase in size during pregnancy and lactation with regression when these physiologic processes have come to an end. These tumors cannot always be told from other benign breast tumors or from early malignant ones and themselves at times undergo malignant degeneration, which fact should condemn them, one and all, to removal as soon as detected. They are by far the most common of the benign tumors, 269 in our series being classified as adenoma or fibroadenoma, 4 as papillary adenoma, 6 as simple cystadenoma, 6 as multilocular cystadenoma, 6 as papillary cystadenoma and 25 as intracanalicular palillary cystadenoma. "They all have certain features in common. They consist of irregular spaces lined by epithelium derived from the acini of the gland. This may be columnar in the small spaces, cubical in the larger, and almost flat or even altogether absent in the larger spaces. The spaces may become distended to such an extent as to be cystic. The epithelium always rests upon a basement membrane, through which it shows no tendency to penetrate."

Malignant change, when superimposed on a fibro-epithelial tumor, may be in the nature either of sarcoma or carcinoma. When sarcomatous the change occurs in the interstitial tissue which becomes altered from a fibrillar to a cellular type, usually of the spindle-cell variety. "A fibroadenoma is to all intents and purposes a gland and contains not only the essential glandular tissue from which carcinoma is supposed to grow, but contains it under conditions of disturbed growth and activity that might be regarded as especially favorable to carcinoma growth." The carcinomatous change can occur not only in the epithelial tissue of the tumor itself but the latter seems liable to induce such change in the epithelium in its immediate neighborhood. For obvious reasons diagnosis based upon clinical signs alone early in the course of malignant degeneration of fibro-epithelial tumors is very difficult. Rapid enlargement of one which has long remained stationary in size or grown slowly, is strongly suggestive but cyst formation in an innocent growth will cause the same phenomena. Safety to the patient demands removal of all fibro-epithelial tumors as soon as detected, the extent of the surgical attack being determined by microscopic examination.

The papillomas which occur in the ducts, usually in or near the ampulla, of which we have seen thirty-five, are often of such small size as to elude any but the most careful and searching examination. They grow from the walls of the duct in the form of wart-like excrescences and occasion as their outstanding symptom a discharge from the nipple. They commonly occur at the age of involution, are usually single, unilateral and centrally placed under the nipple and areola but may occasionally be multiple not only in the same duct but in a number of ducts. In our series they have varied in size from a grain of wheat to that of a large cherry. While as a rule they are fairly well localized, we have seen instances where the entire duct from the ampulla to its point of origin in the breast tissue was filled with tumor tissue. The discharge from the nipple is either clear or bloody: since a bloody discharge may connote carcinoma, doing so in approximately 45% of the cases in which it is present, the importance of determining its significance becomes apparent. Serous or milky discharge from the nipple is sometimes seen long after lactation and cannot be said to be abnormal. Serous discharge is noted in benign papilloma; clear or turbid discharge is at times observed in chronic mastitis due to dilatation of the ducts and acini whose lumens are distended by necrotic epithelial

debris: bloody discharge commonly signifies benign duct papilloma or early duct carcinoma or sarcoma. Breasts exhibiting a bloody discharge from the nipple demand a determination of its origin and of the character of the neoplasm, which can be satisfactorily made only by removal of the growth and its microscopic study. Careful palpation will usually reveal the growth: when it cannot be detected by palpation the site at which pressure causes an exudation of bloody fluid from the nipple will be found to correspond with the location of the tumor. Transillumination of the breast suggested by Cutler in 1929 is of value in the recognition of such growths when the mobility of the breast permits the light to be so placed that the suspected lesion lies between the light and the examiner's eye. The more difficult it is to palpate the tumor, the more likely it is that the latter is benign papilloma: the more definitely outlined the tumor, the more likely it is to be carcinoma. It is granted that duct papilloma may remain benign for a number of years but it is evident from a study of case histories that a goodly percentage of such tumors ultimately become malignant, hence the urgency of their removal and the microscopic determination of their character. In contradistinction to other fibro-epithelial mammary neoplasms these growths in our experience are rarely multiple or bilateral. We have seen but few patients presenting bilateral intraductal tumors: an unmarried woman of 45 gave a history of lumpiness and discomfort in both breasts for eight years and recent bloody discharge from both nipples. Bilateral single intraductal papillomas were present, each showing second degree hyperplasia: both breasts showed chronic mastitis.

Localized areas of chronic cystic mastitis may present symptoms clinically not distinguishable from tumor. Limited areas of indurated, hardened, breast tissue may represent such a lesion or may represent carcinoma. Regardless of whether one believes or does not believe that chronic cystic mastitis predisposes to the development of cancer the uncertainty of diagnosis based upon clinical deductions alone is such as to warrant operative removal whereby an uncertain diagnosis can be made certain by visual and microscopic examination.

Chronic mastitis is such a frequent concomitant of both benign and malignant breast tumors as to furnish grounds for the suspicion that they are definitely related. It was present in 478 of our 1000 patients and in 229 of these it was concomitant with tumor, benign or malignant. "The epithelial hyperplasia of chronic cystic mastitis may pass into a state of epithelial neoplasia, at first benign but which later may become carcinomatous." In a study of fifty-three breasts selected for detailed microscopic examination it was significant among the interesting facts elicited that in at least twenty-one the routine sections showed distinct relationship between chronic mastitis and undoubted epithelial neoplasm. Such an incidence does not prove that chronic mastitis is a causative factor in the production of epithelial neoplasms but affords basis for the belief that such a continued source of irritation in the breast renders the patient more liable to the development of such tumors and yields justification for a surgical removal of, or a resection of, the breast for its elimination. Our records show 142 conservative amputations and 100 resections for benign disease. The resections were done because of localized chronic mastitis alone or in association with simple tumor and consisted in the removal of wedge-shaped section of breast tissue, the base corresponding to the periphery of the gland, the apex to the nipple, of sufficient size to include the visibly diseased lobe or lobes.

In so far as the operative treatment of a tumor of the breast is concerned, the growth is either innocent or malignant: the problem of greatest importance to the patient is the determination of this factor. Since 1917 we have resorted to the routine employment of frozen tissue sections in all cases in which after clinical examination the diagnosis is doubtful. While it is true that pathologists may differ on the interpretation of a borderline case, to say that a surgeon from the clinical history and gross examination can make more reliable deductions as to malignancy than can a trained and experienced pathologist with the microscope is to argue falsely. Removal of the entire tumor with gross examination of it and, if possible, the formation of an opinion, is followed by frozen section and microscopic study. We believe this practice has greatly improved our ability to interpret gross lesions but we are unwilling to rely entirely on it when the question at issue is so fraught with possible disaster to the patient in the event of erroneous inter-

pretation. In determining the extent of operation we have followed the criteria given by McCarty of first, second and third degree epithelial hyperplasia: the first degree is accepted as indicating benignity requiring only the removal of the tumor; the second degree as indicating borderline or precancerous hyperplasia in which conservative amputation of the gland is requisite for protection of the patient; and third degree epithelial hyperplasia as showing frank malignancy demanding radical extirpation.

If the tumor be innocent there only remains for decision the method of removal that confers on the patient the least degree of mutilation since in its removal other considerations than the mere curing of the disease may well receive closer attention. Duct papillomas and other fibro-epithelial tumors lying close under the areola may be reached by a circumferential incision along its border with elevation of the skin and careful dissection paralleling the long axis of the duct. Perfect hemostasis with accurate closure of the wound and precise coaptation of skin margins will result in a minimum deformity or scar. The site of election for removal of other benign tumors and for resection of the breast, from the viewpoints of cosmetics, anatomy and physiology, is to be found at the lower and axillary borders of the gland. A crescentic incision in the sulcus along the lower and outer border of the breast avoids the blood and nerve supply of the gland, permits the latter being turned upward and inward so that all parts of it become accessible, the resulting scar being hidden, and all but invisible. The same incision extended inward supplemented by the excision of a simalunar flap of skin over the lower hemisphere of the gland, with or without preservation of the nipple, may be advantageously employed in conservative amputations in that the ensuing scar is transverse and not exposed to view when summer or evening clothing is worn.

Of our series of operations, 447 were radical amputations done for the removal of malignant tumors, 13 of which were sarcoma and 434 were carcinoma. Of the sarcomas, 8 were reported as fibrosarcoma and 5 as round-cell sarcoma. The sarcomas probably originate in the periductal fibrous tissue which is peculiar to the breast and not infrequently result from degeneration of a primary periductal fibroma or fibroadenoma. They tend to involve the entire breast rather rapidly and in the absence of removal attain a large size. They occur most frequently near the middle period of life and often show cystic degeneration. The more cellular the tumor, the more rapid the growth and the greater the tendency to metastasis. While the latter is rarely noted by way of the lumphatics, the tumor possessing none, it occurs far more frequently by way of the blood stream, the tumor cells penetrating the vessel walls to be carried away as emboli. Unfortunately, as with carcinoma, there is no clinical means of recognizing early internal metastasis and avoiding useless operation. In the early stage of growth there are no symptoms beyond the presence of a tumor. In the periductal tumors bloody discharge from the nipple will at times be noted. The overlying skin is practically never drawn down to the growth as in carcinoma. Rapid enlargement of a tumor which has been quiescent for a long time is suggestive while later a large tumor with a history of short duration, showing evidence of cystic change, covered with thin bluish or reddened skin containing large veins makes the diagnosis apparent.

Granting an early diagnosis the prognosis in sarcoma is more favorable than in carcinoma and even with rather advanced growth, from a viewpiont of local development, the outlook is not entirely hopeless. Since metastasis occurs so generally by way of the blood stream it has been suggested that the removal of the pectoral muscle, axillary nodes and fat is unnecessary. In view of the microscopically proved metastasis to the lymph nodes in some cases and as well of the known early invasion of the pectoral muscles in some such an operation must be regarded as incomplete. We have routinely done the radical extirpation, removing a wide area of the skin with the breast, pectoral muscles, fat and fascia together with the axillary glands, fat and fascia, believing that the best opportunity of obtaining a cure is afforded by a radical removal at the earliest possible time in the course of the growth.

The microscopic reports in the 434 cases of carcinoma showed scirrhous, medullary, adenomatous and colloid types. We have seen none of the sweat gland or of the squamous-cell varieties. The classification of breast cancers is of interest chiefly to the pathologist since to the clinician all are cancers and in the light of our present knowledge there is but one solution to

the problem of treatment. A knowledge of the morbid anatomy is of some value from a standpoint of prognosis, since rapidity of growth and early metastasis are more frequently noted in the cellular than in the sclerotic types.

The incidence of cancer of the breast is greatest in the fifth and sixth decades, very rare before the age of 20 but frequently noted in the ensuing decades. As is true of cancer elsewhere, the younger the patient, the more rapid the growth and the earlier the dissemination. We have but two 5-year cures in the group of patients operated on before the age of 30. A common delusion not entirely limited to the laity is that the disease is one of old or middle age and that a tumor in the breast of a young woman does not require the same investigation as when appearing later in life. In no condition is this policy of watchful waiting more disastrous.

Nothing new can be said regarding the etiology which still remains submerged in obscurity. Heridity, trauma, the relation of the disease to chronic mastitis, to pregnancy and lactation, to nursing accidents such as mastitis and abscess and to other breast tumors undoubtedly play a part in forming the background upon which it so frequently develops.

The most important symptom, readily recognizable by both patient and physician, is the presence of a palpable, single tumor in one breast. Multiple tumors in one or both breasts speak for innocence but do not rule out the possibility that one of the tumors may be malignant. The tumor of primary breast cancer in its early stage is small, painless, hard, infiltrative and fixed in the breast tissue. Its physical signs may arouse one's suspicions but there is nothing pathognomonic about it. Its presence, however, is abundant justification for removing it and, upon microscopic confirmation, for carrying out the radical procedure. In our experience operation at this stage has given over 70% of 5-year cures. With the continued growth of the tumor the overlying skin shows dimpling as a result of the involvement and consequent shortening of the suspensory ligaments. While this symptom, when present, is of paramount importance in the clinical recognition of cancer, it is to be borne in mind that it is also noted at times with mastitis and with inflammation. Retraction of the nipple occurs when the underlying fibrous tissue is invaded and depending upon the location of the growth may be relatively early or quite late in its appearance, or entirely absent. Bleeding from the nipple is noted when the growth originates in the duct or involves it in its progress. Enlargement of the axillary nodes cannot be regarded as an early symptom. Such enlargement may be due to metastasis or to toxic lymphadenitis, the microscope being required at times to make the distinction. The fact that no enlarged nodes can be palpated does not give assurance that metastasis has not occurred, while positive evidence of axilliary involvement indicates a diminished chance for cure.

The presence of all the symptoms mentioned will permit a positive clinical diagnosis of cancer and also give positive assurance that the favorable time for obtaining a cure has already passed. The microscopic character of the neoplasm, whether growing slowly or rapidly, and the duration of its existence are the two important factors in determining the outcome in a given case. Over the first we have no control, while the responsibility for the second factor is divided between the patient and ourselves. In our first 138 cases of cancer the average duration of symptoms before the patients come under our care was 15.8 months, the shortest history being 2 days, the longest 10 years. In the first 160 patients with benign disease, the average duration of symptoms was 17.2 months, the shortest history 1 day, the longest 40 years. These averages have been materially shortened in the subsequent cases as a result of the lay and professional propaganda regarding the significance of tumors in the breast and the fact that they do come earlier makes the diagnosis more difficult since frequently nothing more than a small nodule is present. Since then, with the diffusion of knowledge patients are coming at an earlier period of disease, it is incumbent on us to limit the incidence of cancer by removing the innocent lesions which may predispose to it and to give to those who have cancer the benefit of a prompt institution of the measures which time and experience have proved most reliable. A diagnosis that can be made on clinical symptoms alone should be supplemented by a careful search for possible metastases, including an x-ray film of the chest, in order that useless operations may be avoided. A roentgen examination of the entire skeleton is neither practicable nor always

feasible but if routinely undertaken would detect unsuspected bone metastases.

The only treatment for malignant breast tumors that has stood the test of time is that of surgical removal, alone or supplemented with irradiation, and which should include a wide area of skin with the breast, pectora muscles, fat and fascia, axilliary nodes, fat and fascia. An incomplete operation but invites the disaster we are endeavoring to avoid, namely, dissemination. We have in our files the records of five patients treated elsewhere by simple removal from the breast of microscopically proven carcinomas followed by implantation of radium in the wound and subsequent x-ray therapy. All showed recurrence in the breast giving abundant ground for assuming that such dissemination could have been averted by the radical operation. Irradiation in the treatment of breast cancer holds an important place in inoperable primary and in recurrent cases. Its place elsewhere in this field is difficult to evaluate. We have had no experience with it as a preoperative measure, except in advanced cases in which the extent of involvement seemed to preclude successful surgical removal. In the cases in which, under such treatment, diminution of apparent involvements occurred in degree to warrant carrying out radical amputation, this has been done: in no single case, however, has prolongation of life beyond five years been secured. It is my impression that its employment in such advanced cases showing sensitivity to irradiation has been worth while in increasing life expectancy. If employed preoperatively in every case showing enlargement at the axillary nodes, there is, I think, justification for the belief that the percentage of five-year cures would be enhanced. Greenough in his report embracing the results from numerous clinics assembled by him for the Committee on the Treatment of Malignant Diseases with Radium and X-ray of the American College of Surgeons, concludes: "These figures fail to indicate that the use of prophylactic x-ray as practiced in this series increases in any way the number of cases of cancer of the breast which are free from recurrence five years after operation." Other reporters claim a definite increase in five-year cures following its preoperative employment. In 1933 a "follow up" of 217 cases operated on by us before 1928, and in none of which irradiation, either pre or postoperatively, was employed, showed 46% of five-year cures, notwithstanding our having to count 28 unfound cases as dead. The percentage in those showing lymph node metastasis was 26, and in those with no lymph node involvement was 75.8. We then began using postoperative irradiation therapy as a routine measure, although it was difficult to see that it could be of any great value other than in diminishing local and axillary recurrences, which, however, is distinctly worth while. We have at all times carried out the radical operation of removing the breast, pectoral muscles, fat and fascia, axillary glands, fat and fascia, and finally reached the conclusion, upon which our practice is based today, that when microscopical examination of the removed tissue shows no metastasis in the breast or in the lymph nodes, postoperative irradiation is not indicated, since, if metastasis has occurred, the sites of such lodgement are so deeply or so distantly located that irradiation will prove unavailing. When, however, the microscopic examination shows metastasis in the breast or lymph nodes, postoperative irradiation is employed on the assumption that it may prove helpful in destroying superficial metastases which may have escaped removal: neither of the groups so treated has attained sufficient age or number to be of value for comparison. In patients approaching the menopausal age x-ray sterilization is worth while in eliminating the estrogenic influence in promoting further growth of possible metastatic implants. When the patient is younger, the question of sterilization is determined by the absence or presence of demonstrable metastasis: where none can be found, the assumption that the growth is limited to the breast justifies the retention of the child-bearing function, and conversely, when present, the increase in margin of safety resulting from its ablation warrants such a course.

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The Skin of an Allegeric Patient which fails to react to the intradermal injection of allergen to which he is sensitive may be made to react to the passive transfer of his own blood serum into his own skin. Cowie, D. M., *Ann. Int. Med.* 11:949, 1937.

Sulfanilamide in a daily dose of 80 grains for four days followed by 40 grains for four days, and then 20 grains for seven days produced 85 per cent cures in 134 cases of gonorrhea. No complications were observed. Orr. H. *Canad. M. A. J.*, 37:364, 1937.

THE FUTURE OF THE COUNTY MEDICAL SOCIETY

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I have always keenly felt the importance of membership in the County Medical Society. Most of my early efforts as a Councilor were directed to so stimulating the profession locally that there was a desire upon the part of each medical man in the community to belong to his County Medical Society.

Membership was the first thing necessary to make a physician conscious of his need of better methods in the procedure of the practice of medicine, and his ethical responsibility to his profession and the community. With the profession well organized, there will be a higher regard for the ethical relations that should exist between the members, just as the highest efficiency of an army is formulated by cohesion and training.

I thought in my early years that with this accomplished, the medical men locally would gradually be able to take hold of their problems and settle their own difficulties.

Twelve or fifteen years ago, it seemed to me that with better organization we could so improve the local conditions under which medicine was practiced, with a better feeling existing in the profession, that we need not have serious fears as to encroachment in the affairs of public health by the State and Government.

In looking back over the past, it is quite evident to any medical thinker that much of our difficulties at the present time have been due to the neglect or inability of the profession in the last twenty-five or thirty years to deal with community needs and affairs as scientific medicine made its progress.

From one who has travelled the country from coast to coast, visiting many State Medical Societies and County meetings, as well as many public meetings, the conditions of the medical profession of today is well set forth by the President of the American Medical Association, Dr. J. H. J. Upham, of Columbus, Ohio:

"As far as the scientific side of medicine is concerned, we can be proud of the progress that is being made. The majority of physicians are tremendously interested in self-improvement and in raising the plane of medical practice all over the country. However, there is another side that is not altogether satisfactory. There is a feeling of uneasiness. Much of this has been the result of lack of organization in some areas. There is great need of better organization. We should consider our professional activities much as we do our personal activities. There are two sides to the practice of medicine, the scientific side and the economic side. One is necessarily dependent on the other."

No doubt the difficulty has been primarily the necessity of earning a living, supporting and educating a family and to acquire a competency for old age. But along with this there should have been organization, so that the unity of effort would have been more successful in solving the problems that have gradually accumulated over a period of years and that now seem an arduous task to accomplish.

My memory goes back to the wasted opportunities of medical men, on account of lack of organization, engaging in political activities that in no way helped the medical profession or the community in which they lived.

Necessarily, a new country circumscribed the opportunities of medical men for scientific or ethical improvement. It now seems the task to determine the needs of our respective counties and formulate plans to eradicate the harmful procedures, politically and otherwise, that have guided affairs in our communities.

It is now that the officials of the American Medical Association have at last found it necessary to formulate and assist with plans that have been found to be most successful in various localities throughout the country, that may be applied to help us in our efforts.

Where the profession has neglected its responsibilities, out of a lack of organization or concern in public affairs, the people, realizing this, have taken the lead and the medical profession has lost its opportunity in leading and organizing in the improvement of public health, social and moral betterment in their communities.

In this way, most of the work has been led by social workers, and the medical profession, instead of being the first thought of such an organization in most of the communities, is now only sought where the knowledge of medicine and the art of its practice is found necessary.

Prepared for Secretaries Conference, Springfield, May 17, 1938.

In the talks that I have made during the past winter, to civic and county medical societies, I have discussed the economic conditions that brought about the entirely new and unforeseen circumstances, which has led up to the question as to the medical profession being able to care for those of the underpaid group, under $1000 and $1200 annual income, and as to funds for medical and hospital care to those who on account of loss of employment, are entirely unable to have adequate medical care.

The local or civic charities have been unable to supply even food, clothing and shelter without help from government funds. Many of the old plans under county and township administration have been inadequate and too expensive to provide for the greater number in need. This is now the reason why the trustees of the American Medical Association have decided upon this plan of suggesting a guide for the more than 2,000 county medical societies of the United States, to determine the real condition as to whether there is adequate medical care, that plans may be devised where medical care may be carried out more economically and advantageously.

This survey, I am sure, will bring to the minds of each member of a county medical society his responsibility, individually through committees, the facts of his personal knowledge of the people that are every day under his direct observation. This will include a report of what part of this work is done as charity, or for less than the usual fair schedule of fees.

In response to this plan that will guide the State and County Medical Societies in their contact with the public, the trustees of the American Medical Association recently adopted resolutions suggesting and offering aid to encourage medical societies to collect information concerning medical needs in accordance with established policies and local conditions.

"Whereas, A varying number of people may at times be insufficiently supplied with needed medical service for the maintenance of health and the prevention of disease; and

"Whereas, The means of supplying medical service differ in various communities; be it

"Resolved, That the American Medical Association stimulate the State and County Medical Societies to assume leadership, securing cooperation of State and local health agencies, health authorities, and dental, nursing and correlated professions, welfare agencies and community chests, in determining for each county in the United States the prevailing need for medical and preventive medical service where such may be insufficient or unavailable; and that such state and county medical societies develop for each county the preferable procedure for supplying these several needs, utilizing to the fullest extent the medical and health agencies now available, in accordance with the established policies of the American Medical Association.

"Be it further

"Resolved, That the Board of Trustees of the American Medical Association establish a committee to cooperate with the Bureau of Medical Economics to outline the necessary procedures for making further studies and reports of the prevailing need for medical and preventive medical services; and that the Secretary of the American Medical Association arrange to develop such activities through the secretaries of State and County Medical Societies in each instance, urging the formation of special committees in each county and state where committees are not available for this purpose."

The County Medical Society should appoint a special committee to direct the collection of information. This committee should be charged with the responsibility of securing information from those agencies which have exhibited official or voluntary interest in the medical needs of the community. Such information can best be secured by separate, individual contacts. Public mass meetings do not often yield dependable information.

It will be necessary for county medical societies to consider well the number and qualifications of the persons who are to assemble the information desired. The number will depend on the size and details of the program undertaken and the resources available.

This will make felt the need of well-planned and hard-working committees to solve the difficulties that I have outlined. Show me a society with hard-working committees and you can be sure that there will be found a society that is depended on by the community for all matters of public health, sanitation, meeting its problems of charity and indigency, and the management of its hospitals, welfare agencies and community chests.

That we may determine the prevailing need

for preventive and medical service, and that these needs may be provided by the best ethical traditions of our profession, there must be a well functioning medical society that is in every way capable of meeting its responsibilities.

It is not only the purpose of this survey to find the existing conditions in each County Medical Society, but after they are looked over by the committee and carefully correlated, measures are to be put into effect to eliminate useless expense in accomplishing the needs and problems of the community.

This is going to bring about a more efficient County Medical Society than we have had in the past. Instead of looking to the American Medical Association or the State Medical Society to solve our medical problems, much of this can be accomplished by the well organized membership of the County Society, who largely shares the responsibilities of organized medicine.

We need a new united effort from every factor concerned in health, if we are to bring better health to more of our people. To improve the quality of medical care, it is equally important that medical care and health service should be placed in the reach of those unable to procure it for themselves.

Dr. Thomas Parran, Surgeon General, U. S. P. H. S., stated his belief that every health organization should have local control, and that every health program should be built on the specific needs of the community it is designed to serve, for unless we have a health organization in every community, and the leading Doctors are interested enough to set its standards we shall never have a successful health effort against the great plagues of our time.

It is easier to control disease than it is to control poverty, and poverty in turn begets disease. Hence, the importance of every effort of organized medicine to be health-minded in its community.

The purpose of the County Medical Society is to bring together men with trained minds, that they may be of the utmost benefit to the community in carrying ever forward the most advanced ideas and proven facts to combat disease, not only in the community and the school, but in the home and to each member of the fireside, for only happiness can dwell where there is absence from worry and sickness.

The medical profession, with all of its many specialties, are after all combined under one great organization, for the same purpose of ever increasing our knowledge of the most successful manner of curing and controlling disease.

This great heritage medicine bestows upon one who has chosen to devote a life to learning the approved truths and knowledge to combat disease, and by study to add to this knowledge his own contribution to the future of medicine for the benefit of his fellowmen.

PRENATAL CARE

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Prenatal care of the expectant mother has, during recent years, come to be recognized as an extremely important part of the duty of the obstetrician. Both in private practice and in the clinic the proper conduct of pregnancy demands that constant supervision be maintained. While all complications of pregnancy cannot be avoided, it is possible to increase the safety of the expectant mother sufficiently that care during pregnancy becomes an indispensable part of the duty both of the obstetrician in private practice and of the obstetric clinic. We have found, both in the active prenatal clinic of the Evanston Hospital, and in the private work of the members of the attending staff of the department of obstetrics and gynecology, that a definite plan of prenatal observation has been to the best interests of our patients. The plan followed is the same so far as its essentials are concerned, in both ward and private patients. The clinic patients are seen in an out-patient clinic provided with three cubicles for examination, adequate nursing service, and necessary instruments for examination. One of the most valuable individuals in our clinic personnel is a nurse from the local Visiting Nurse Association, who attends each clinic and from whom may be obtained much information concerning the patients. Between clinic days she keeps in touch with the women in their homes, advises them, and communicates to the doctor any information which she thinks he ought to be told. Patients may be referred to any of the other clinics of the

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hospital and are regularly sent to the dentist after the first visit.

One of the three most serious complications of pregnancy and labor is toxemia and its sequence, eclampsia. Eclampsia may be reduced so efficiently by painstaking care of pregnant women that we for years past have not had enough cases of this disease to teach the internes and nurses to care for them. If nothing further were accomplished by prenatal care than this increase in safety by the reduction in the incidence of this disease it would be worth while.

The first duty of the physician who assumes the responsibility of the care of an expectant mother is to ascertain whether her general physical condition is normal, whether any defect or disease exists which will increase the risk of pregnancy and labor. It is essential that the obstetrician know whether some cardiac defect or pulmonary infection is present. Should a heart murmur be found, its presence alone is of no great moment but it is of the greatest importance to know whether the heart is entirely compensated. A murmur is, of itself, of little importance if the heart is doing its work without difficulty. As an interne in the County Hospital in Chicago one of the cases which made a strong impression on me was that of a man who had, for years, carried on the laborious occupation of a piano mover. His heart was perfectly compensated and he had come to the hospital for something entirely unconnected with his circulatory condition. A history of decompensation, particularly recently, a dusky tint of the lips, edema of the ankles and moist rales at the bases of the lungs are significant signs. An active intelligence and five senses in good working order are all that one needs to discover these signs of cardiac incompetence. An electrocardiogram may be used as a refinement of diagnosis but, in most cases, this is all that it will be. A careful history will have disclosed an earlier pulmonary trouble and physical examination will indicate whether any trouble remains. In some cases a roentgenogram of the chest may help but, again, the chief reliance should be placed in the perceptions of the physician himself. The great majority of physicians who must care for women in pregnancy and labor work in communities in which all the refinements of laboratory diagnosis are not available. A decision must be made as to the management of the women whose heart is not functioning normally but it should be remembered that, with judicious management, the majority of women with heart disease may be carried through pregnancy and labor safely.

Patients sometimes give a history of pulmonary tuberculosis, or an illness which they think may have been tuberculosis. An active tuberculosis in the first trimester of pregnancy is a justifiable reason for the interruption of pregnancy but an old, quiescent, healed lesion is not. An active tuberculosis in late pregnancy will usually not justify interruption. The mother will not receive enough benefit to compensate for the loss of the fetus. As this is written, a private patient is under observation in the last few weeks of pregnancy, who has passed through the entire pregnancy with one lung collapsed. Pneumothorax had been carried out by Dr. Jerome Head many months prior to the beginning of the pregnancy and, with his cooperation, the pregnancy has progressed without incident. Delivery will probably be by abdominal section to spare the remaining lung too great strain. The advent of an acute respiratory infection in a pregnant woman should always be looked upon as more serious than in a woman who is not pregnant. She should be placed in bed at once and made to remain there until her temperature has been normal for at least one day and longer if possible. Induction should never be done in the presence of pneumonia. Premature labor will usually come on spontaneously and is usually rapid. Interference is contraindicated. Treatment should be that of a pneumonia, the pregnancy being disregarded for the time being unless labor sets in.

A routine Wassermann is an essential part of prenatal care. There has been so much in the public prints about syphilis in the last few years that our patients are usually informed about it and regard the taking of blood for such a test as quite natural. It is no longer excusable to allow a woman to go through pregnancy with an undiscovered lues, both on her own account and upon that of her infant. McCord has recently shown that, in the case of a syphilitic mother, if treatment is begun early in pregnancy and carried out energetically, 95% of the babies will be healthy. If the lues is not treated, 30% of the infants will be infected. Treatment, if needed, should be managed by an expert syphil-

ographer. Gonorrhea, if present, should be treated as conservatively as possible. No active treatment should be used unless unavoidable. Simple douches, often of salt solution, for cleanliness only, may be used. A trichomonas invasion may cause the mother much discomfort. Gentle douches of luke-warm soap suds and the use of a suppository containing picric acid will usually enable her to get through the pregnancy, when more energetic measures may be used if needed.

Every pregnant woman should be sent to her dentist, or, if she is a patient in the clinic of a hospital, to the attending dentist. Her teeth should be inspected for cavities and these should be filled at once as they increase in size more rapidly during pregnancy than at other times. Non-vital teeth should be regarded with especial care. If non-vital teeth are present roentgenographic examination will in most cases be wise. Abscessed teeth should be extracted. Extraction is very unlikely to cause abortion but local anesthesia is better than gas as the extraction can be done without haste and with less trauma.

The taking of pelvic measurements is so fundamental that no time need be spent urging it. Failure to do so today may be looked upon as neglect. Roentgenographic study of the pelvis may be wise if asymmetry is present and in some cases near the end of pregnancy in order to estimate the relationship between the pelvis and the head. A number of methods of roentgenographic measurement have been described. If the obstetrician has become expert in one of these or if a roentgenologist is available who has the necessary experience and who has the needed apparatus, they may be used. Few hospitals or communities are so provided.

Some degree of anemia is frequent in pregnant women. This has been studied in a number of clinics in this country, including our own from which Galloway has published two reports. The anemia is usually not severe. A blood count early in pregnancy is important. If anemia is found treatment should be instituted as it is not wise to allow the woman to approach the end of pregnancy with her blood below par. The anemia usually corrects itself after the termination of pregnancy. Blood loss of more than the average amount might easily be more serious in an anemic woman than in one who is normal. Iron is the best remedy and it should be given in adequate doses.

A pelvic examination should be made in early pregnancy to ascertain whether the uterus is in normal position and whether there are any uterine or ovarian tumors. The management of these will not be discussed. It is extremely important, if a tumor be present, that it be known early in the pregnancy.

After having completed the necessary examinations the physician proceeds to advise the mother as to her mode of life during the pregnancy. The first point taken up with her is that of diet. Her gain in weight should be restricted to twenty pounds, or at most twenty-five, during the pregnancy. The gain in weight of the mother has nothing to do with the weight of the infant but women who gain excessively in weight are much more likely to become toxic. This must be impressed upon her. If she is over weight the gain may need to be even more restricted while a woman who is definitely under weight may be allowed a little more than the usual twenty. That an undue gain in weight is associated with an increased danger of toxemia is well established by the experience of a number of clinics. She should be asked to be conservative in the amount of fats and carbohydrates in her diet. If, in spite of caution, she gains more than she should a calorie list will be useful. She should be instructed to take each day some of the foods which contain vitamin C. This is important because of its protective effect upon the teeth and because it aids in the formation of the fetal skeleton. Other vitamins are usually present in the diet. A sufficient water intake should be advised, six to eight glasses per day. Especially during the winter, when in this state the amount of sunlight is diminished in winter, pregnant women should be given calcium and vitamin D, without which the calcium will not be utilized. The optimum amount of calcium is 0.7 Gm. per day. Any one of a number of soluble calcium salts together with vitamin D should be given.

Pregnant women tire more easily than non-pregnant ones and more rest is essential. Light housework may be done but the heavier forms of work should be given up. Light outdoor exercise should be taken, each woman doing what she finds she can without fatigue. Very active exercises should be given up, such as tennis,

horseback riding and long cross-country automobile rides. If there has been a history of abortion, activity should be restricted, especially during the first trimester during which time about 80% of abortions occur.

Breast hygiene should be very simple. The so-called hardening lotions are useless and sometimes irritating and should not be used. Oil and grease of any sort is similarly without value. It is not possible to alter the skin with which the woman is endowed but it can be kept in as good condition as possible. To this end, as soon as any discharge is noted, and in the last month in any case, the nipples should be gently washed each day with some non-irritating soap and dried gently with a soft cloth. Vigorous rubbing, especially with a rough cloth or a brush in order to toughen them is uncomfortable, useless and harmful. Complete cleanliness is the most important thing. The secretion which escapes from the nipples toward the end of pregnancy may decompose on the skin, and, by harboring bacteria, increase the likelihood of infection. Brassieres should be of the uplift type and should not press the breasts against the chest wall. Fortunately the fad for the boyish figure has passed.

Constipation, which is rather frequent during pregnancy, should be managed, as far as possible, without the use of cathartics. Diet containing roughage, an adequate water intake, some one of the forms of liquid petrolatum will usually suffice. If they are not effective some gentle laxative, as aromatic cascara, may be used.

The complications of pregnancy cannot be discussed but few words should be said about the prevention of abortion. One cannot always prevent abortion but success is attained often enough to make the attempt worth while. If the patient gives a history of abortion we usually have an estimation of basal metabolism for hypothyroid women are more apt to abort than those whose thyroid activity is normal. Should a rate less than normal be found, it is corrected by the administration of thyroid before the beginning of another pregnancy and the taking of thyroid is continued throughout the new pregnancy. Focal infections should be eliminated. If a retroversion is found, although a backward position of the uterus is probably only rarely the cause of an abortion, it may be corrected and the uterus held in position by means of a pessary until it is too large to again assume the backward position. A retroversion in a primipara may be let alone unless it fails to correct itself before the end of the third month. As soon as the pregnancy has begun the administration of progesterone should be started, one unit being given three times a week. Vitamin E may also be employed although this substance has not yet been thoroughly evaluated as to its effect in decreasing the likelihood of abortion. Shute and his co-workers believe that the doses hitherto given are too small. A sufficient calcium intake must be arranged for, the amount already indicated being sufficient. At the time at which menstruation would occur were the woman not pregnant she should give up all activity, remain at home and lie down much of the time. Only gentle exercise and no journeys should be taken. Any sign of bleeding should be followed by bed rest at once which should continue until forty-eight hours without bleeding have passed. The number of abortions may be decreased but it is impossible to completely prevent their occurrence.

That prenatal care accomplishes a useful purpose is evidenced by the lesser number of cases of toxemia which are seen today in the private work of careful obstetricians and in clinics in which prenatal observation is effectively carried out. Eclampsia cannot be wholly abolished but the number of cases can be greatly lessened. During recent years in our own service there have been so few cases that we have not had opportunity sufficiently to instruct our internes and nurses to care for the disease. Eclamptic convulsions have been demonstrated to the last two classes of nurses by means of a motion picture. Every pregnant woman is entitled to the increased safety which proper observation during pregnancy gives and which she should receive either from the private physician or from the clinic, if she is to be delivered upon a ward service.

DISCUSSION

Dr. Ralph R. Loar, Bloomington: Dr. Danforth stated in his letter to me that he felt it an imposition to inflict the Society with such a simple detailing of the matter of prenatal care and that he did so only upon the request of Dr. Carlisle. I am sure you will agree that both the subject and its treatment need no apology and I feel honored in being asked to discuss it. The subject is of such importance that constant repetition is perfectly justifiable.

I do not feel it necessary, and time would not permit, a detailed discussion. However, I would like to just touch upon the matter of the mental hygiene of preg-

nancy. It is here that each patient must be individualized. Something more is necessary besides routine examinations and a pamphlet with stereotyped instructions. The mind of the primipara particularly is often full of wonderment and many times unexpressed fears, implanted by well meaning friends and relatives. Time and patience are required to elicit these and one should begin at the first prenatal visit. I suggest that she keep a list of all the points that worry her and then go over them carefully at subsequent calls. Not the least of these worries is the bugaboo of finances which can be minimized by installment payments, so that at least her convalescence is not disturbed by the fear of not having enough left from her budget to pay the doctor after the hospital bill has been paid.

The need for improvement in prenatal care for every prospective mother, particularly in smaller communities, is a very real one and I am sure the emphasis the Maternal Welfare Committee is placing upon it, cannot fail to effect definite results.

Every man or woman doing any obstetrics at all must feel a greater responsibility in the care of his patients, whether of the indigent or well-to-do classes, and the public, not already acquainted with the value of such care, must be educated to cooperate with the profession to the fullest extent. When this is accomplished there will be no occasion for the remark of one man who said, "I cannot afford to put so much time on one patient for the fee that I get."

It is obvious then that it is necessary for the physician to keep himself informed as to the progress of investigators in this field, together with the willingness to give more time and study to each individual case, and lastly, to thoroughly convince the patient that such painstaking study is of definite value and worthy of remuneration commensurate with the economic status of the individual. As Dr. Danforth said in closing his paper, "Every pregnant woman is entitled to the increased safety which proper observation during pregnancy gives and which she should receive, either from the private physician or from the clinic."

DIAGNOSIS OF CONTRACTED PELVIS

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When a surgeon puts on his gloves and a gown to operate, he has to deal with a pathological condition in every case whether it be opening a furuncle or doing a gastric resection; in one hundred operations he gains valuable experience in each one. When an obstetrician delivers one hundred women, ninety-five of them are so nearly normal that the experience gained in caring for them is of little or no help in the management and delivery of the five remaining cases in which he will have to deal with some pathological complication.

It is among this 5 per cent. that the deaths and injuries occur which have caused it to be claimed that the United States has a higher mortality and morbidity in childbirth than most other civilized countries; and it is to these comparatively few cases that our attention and effort must be directed if our results in obstetrics are to be improved.

In order to secure a successful outcome in a complicated obstetric case the earliest possible recognition of conditions that may cause trouble is of the greatest importance. All pregnant women look much alike at term, but each one is a potential tragedy. When we can select in advance the cases that are to be abnormal we have gained an immense advantage.

Some of the difficulties cannot be foreseen. It is impossible to know before labor starts what the character and efficiency of the pains will be. The relative size of the head and the pelvis in doubtful cases is acknowledged by the most experienced to be a difficult thing to determine and one of the most important things to know. Disproportion between the head and the pelvis is not a common complication, but a fatal result is the rule if it is unrecognized. The fact that so large a proportion of heads will go through if given time has a tendency to give us a false sense of security, so that when we do encounter an actual disproportion we are surprised to find after hours of labor that the head will not pass the pelvis; then a high forceps, late cesarean section or occasionally a craniotomy adds one or two more to the mortality list. In our efforts to reduce the number of such disastrous results in Cook County Hospital, a modification of the Mueller method has been developed which is of great value in selecting out those cases which must be delivered by the abdominal route on account of contracted pelvis.

This method consists simply in measuring the pelvis with the head that is to pass through it. This was first proposed by Peter Mueller, Germany, in 1885. Pressure was made on the head above the symphysis to see if it could be forced into the pelvis, and was used to determine the time at which premature labor should be induced. The modification of this method consists of making pressure on the breech of the baby in the fundus, instead of on the head over the sym-

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physis. This causes no pain, requires no unusual skill, though some practice may be needed if one does not habitually use the tips of the ischial spines to measure the progress of the head through the pelvis. The application of the method presupposes a knowledge and use of the following facts:

The important diameters of the head and the pelvis are the biparietal diameter and the true conjugate respectively. The successful passage of the head through the inlet depends upon the relative sizes of these two diameters. When the biparietal diameter has passed the true conjugate, bony resistance at the inlet has been overcome. When the lowest bony part of a moderately molded or unmolded head has reached a line drawn between the tips of the spines of the ischium, the biparietal diameter is passing the true conjugate. Allowance must be made for caput succedaneum and thickness of cervix or lower uterine segment in front of the head. If a head lies lower than this level or can be impressed below this point, it is positive evidence that no bony disproportion at the inlet exists.

The greatest number of serious pelvic contractions are found at the inlet. The cases in which the moderately molded or unmolded head can be impressed below or is found to lie below the ischial spines will rarely be found to offer impassable bony obstruction at the outlet.

With the use of this method it has been shown that the widely prevalent idea that the head at term cannot be pushed downward any appreciable degree with the cervix undilated and the bag of waters unruptured is untrue. In approximately 90 to 96% of all cephalic presentations at term, the lowest part of the head can be impressed to or below a line drawn between the tips of the spines of the ischium. This number, of course, includes those cases in which the head already lies at such a level.

With the patient in the lithotomy position on a table, not too high, the examining finger in the rectum locates the tips of the ischial spines and notes the relation of the lowest part of the baby's skull to a line drawn between them. The hand on the outside is placed above the breech of the baby and is sunk as deeply as possible toward the mother's spine, *the forearm parallel to the long axis of the mother.* Pressure is then made on the breech toward the inlet and the descent of the head noted with reference to the interspinous line, allowance being made for the thickness of the lower uterine segment, the cervix or caput succedaneum if present. To avoid traumatism and pain the pressure is begun gradually and after the maximum is reached is slowly released.

If the head cannot be impressed to the spines, an assistant places the palm of one hand flatly over the middle of the baby's back to prevent flexion, and the fingers of the other hand placed palmar surface downward above the head over the symphysis press the head downward and backward in the axis of the inlet, while the examiner makes pressure on the breech and notes descent with the internal finger.

If impression fails with the aid of an assistant, a trial is made under a short surgical degree of anesthesia.

With the use of the method in several thousand cases by internes in the prenatal clinic and in the wards at Cook County Hospital, there has never been observed bad effects of any kind whatsoever to mother or babe.

Four conditions in pregnancy are known to prevent impression of the head. These are—incomplete development of the lower uterine segment, excess of liquor amnii, and lack of cooperation on the part of the patient and disproportion. Further experience will no doubt reveal others which have not yet been determined. The best results are obtained the nearer to term the examination is made. It is usually taught that the lower uterine segment develops during labor. The lower uterine segment develops during pregnancy and reaches its highest point of development in pregnancy at term. During labor the contraction ring rises upward and the lower segment becomes correspondingly longer. The cervix becomes progressively shorter as pregnancy advances because the lower uterine segment develops at the expense of cervical tissue. Therefore, the length of the cervix indicates to what extent the lower uterine segment is developed. In primiparae the head often sinks into the pelvis two weeks before term when there is room enough in the lower uterine segment. In multiparae, on account of the relaxed abdominal wall, the head usually remains high until labor begins, but it may be pressed into the pelvis at or near term if all conditions are normal.

The excess of liquor amnii prevents impression for mechanical reasons and must be given consideration in cases in which the head cannot be made to enter. Oversensitive patients may require anesthesia, and the muscular relaxation is an aid in some doubtful cases in which voluntary resistance is not apparent. Not more than two or three cases in 100 require anesthesia.

Diagnosis of bony disproportion is made by the elimination of three of the causes of failure to impress the head. When the patient is in labor, at term and the cervix short, the lower uterine segment is developed sufficiently to allow the head to descend. If the bag of waters is ruptured or if there is only a small amount of water in the uterus as shown by abdominal examination, this cause is eliminated. If the patient is cooperative or if an anesthetic has been given to make the test, the third cause is eliminated—lack of cooperation. This leaves disproportion between the head and the pelvis as the probable reason for failure to impress the head. The diagnosis is further supported if the head overrides the symphysis to an abnormal degree or if signs of rickets as indicated by external pelvic measurements, a rachitic angle on the anterior wall of the sacrum, and a shortened, true conjugate diameter.

The use of the method begins in the middle of the ninth month, two weeks before term. The impression is first tried in the office. At this time the head approaches the size it will be at term and the lower uterine segment may be sufficiently developed to permit the head to settle into the pelvis or permit it to be impressed below the spine. If the head has already entered the pelvis the lowest part lies below the spines and no impression is needed. If, however, the lowest bony part of the head lies above the spines the head has not entered, the impression is tried to see if it can be pushed into the pelvis. If it goes below the spines we know that the head will pass. If the method fails at this time it is tried again at term. In 95 out of every 100 women at term it will be possible to make the diagnosis that there is no disproportion between the head and the pelvis.

The five out of each hundred women that remain are immediately placed in a group by themselves for special management and study. In these cases the mechanism is regarded as doubtful because the head cannot be impressed and we know that one or more of these may be a case in which the head cannot go through the pelvis with a live baby. And each case is conducted from the beginning with the knowledge that any one or more of them may need to be delivered by cesarean section. No vaginal examinations are made, rectals only. Impression is tried at various times during the early part of labor before and after the bag of waters is ruptured. The head that cannot be impressed below the spines after rupture of the bag of waters is generally meeting with bony resistance. This disproportion may be one of two kinds, either the mechanism is impossible or the pelvis may be large enough to permit the passage of an excessively moulded head after hours of labor with sufficiently strong and efficient labor pains. These are border line disproportions. It must be remembered that the mortality for the babies in such labors is very high on account of cerebral hemorrhage, asphyxia, and difficult forceps operations that may be necessary.

The final decision as to whether the head will go through the pelvis may be made by the test of labor, with a view to cesarean section before the time is passed for safe delivery. The diagnosis between absolute disproportion and border line disproportion is extremely difficult and often impossible, and it is my opinion that cesarean section is justified in border line disproportions provided the case has been properly managed from the beginning without vaginal examination or manipulation of any kind; when the head cannot be impressed below the spines after six hours of labor and after the bag of waters has ruptured. If this dictum was generally observed the salvage of babies alone would amply justify the few unnecessary cesarean sections that would be done.

If every doctor doing obstetrics would learn this method and use it as a routine in every case which comes under his care, two of the prominent causes of obstetrical disaster would be practically eliminated, namely, late cesarean section, and fatal high forceps operations. The use of this method would seem to be justified if it served no other purpose than to enable the doctor to select 95 cases out of every 100 which he delivers and know that in each one of them there is no disproportion between the head and the pelvis.

DISCUSSION

Dr. William Cooley, Peoria: This is a most timely

and valuable paper. It is highly instructive not only for one specializing in obstetrics but for the general practitioner as well. I trust that when it is published we will all take the time to study it carefully.

We know of no one procedure that is as effective and that does not require any expensive equipment in determining the relative size of the fetal head and maternal pelvis. For the past four years we have made use of this method and have found it very valuable in making a diagnosis of disproportion.

I would like to ask the essayist in cases where the diagnosis between absolute disproportion and borderline disproportion is extremely difficult and often impossible if x-ray pelvimetry and fetal cephalometry, using Ball's instrument, would not be indicated or can one get sufficient information without it?

We have used the instrument several times in the past three years and each time have found that it simply confirmed the diagnosis we had already made of disproportion. It also saves the patient from too long a test of labor with possible rupture of membranes and the dangers that accompany it. In each case we did a cesarean section after the results of the measurements indicated that a live baby could not be born the natural way.

Dr. Charles J. Heiberger, Peoria: I used Dr. Hillis' method and was impressed with a few things that he has mentioned that I would like to bring out. I asked him once before about posterior positions that did not impress very well. I have come to the conclusion that these posterior positions occur in slight disproportion. Another thing that I have come in contact with is the funnel shaped pelvis, the male type of pelvis in which I have been fooled as to the impression in an occasional case. I could impress the head but had considerable difficulty in delivering the patient.

Dr. William A. Simunich, Chicago: One of the theories why lightening occurs is that the lower uterine segment relaxes. If we take those cases in which the lower uterine segment is not relaxed and then give the patient an anesthetic, the segment will relax and we will have many more cases in which this method will be successful.

Dr. Otto H. Crist, Danville: I have watched Dr. Hillis' maneuver for many years and have watched his publications. I have tried to do this procedure and I cannot learn to do it. I can appreciate it in a trained institution with specialists. It is just like Potter's version or Dr. Reis' myomectomy. In their hands and in their institutions they are very safe procedures. They are procedures for specialists to work with and are not for the country practitioner. If I were to do a cesarean section when I could not impress a head into the pelvis I would be doing a great many cesarean sections, more than necessary. If the obstetricians in my community would do a section when they could not impress the head, cesarean section would be far more common than it is. Again I say the procedure is well in institutions where there are trained people to do it but the country doctors have not yet learned it.

Dr. David S. Hillis, Chicago (closing): I entirely agree with Dr. Cooley's suggestion that x-ray measurements of the pelvis and the head would be valuable in cases of borderline disproportion. With such facilities at hand x-ray diagnosis is a valuable aid in determining why a certain head cannot be impressed below the spines at term. When the head cannot be impressed below the spines all known methods to determine whether the pelvis is large enough to pass through, or not, should be used. It is true that this method must be learned as is any other procedure which we do in obstetrics and it requires a certain amount of practice. I am convinced, however, that any doctor doing obstetrics who practices the method on every patient he sees near term can learn to do it. Several of the residents at County Hospital have told me that they are not able to impress occiput posterior cases as well as when the occuput is anterior. This does not agree with my personal experience but I am not prepared to say that it is not true. With respect to funnel-shaped pelvis I have not encountered a pelvis in which the head could be impressed below the spines and which met with serious bony obstruction. Of course, a complete examination of the pelvis should include measurement of the pelvic outlet particularly if the head cannot be impressed.

ANEMIA AND JAUNDICE IN THE NEW-BORN

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In this symposium on diseases of the new-born, it is well that we reserve a place for the discussion of icterus and anemia, since icterus of one type or another is such a common clinical finding in the neonatal period or first month of life. It is also fitting that we attempt to discuss anemia and jaundice concomitantly since there is such a close relationship between these two clinical signs, jaundice in the new-born resulting primarily from increased blood destruction, wherein hemoglobin is liberated from the red cells and broken down into bilirubin, a process which if severe enough leads to various pathological states, one of which may be anemia of the new-born.

Before discussing the clinical types of icterus in the new-born, it is well to review the mechanism of the production of jaundice. The more clear the conception of the diagnosis and etiology in any disease or symptom, the greater probability of its being dealt with successfully.

Many theories have been advanced to explain the commonest form of icterus in the new-born, namely physiologic icterus. This article cannot attempt to mention them all, but will merely

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bring to you the usual accepted mechanism responsible for icterus in the new-born.

The fetus really exists in a state of oxygen want or relative anoxemia. Pure oxygenated blood exists in only one vessel of the fetal circulation, the umbilical vein, coming from the placenta to the fetus. In the rest of the fetal circulation arterial and venous blood are mixed in the liver and heart. Nature produces an increase in red blood cells, due to the relative anoxemia, similar to that seen in persons residing at high altitudes, or in congenital heart disease wherein admixture of venous and arterial blood occurs. In the fetus, the liver, spleen, kidneys and tissue beneath the skin are the main blood-forming organs, prior to full development of the bone marrow at maturity. The unusual demand for red cells in the fetus seems to lead to the production of the embryonic cell forms, such as nucleated red cells and reticulocytes. It would seem that the fetus makes up for its oxygen want by an increase in red cells, really a polycythemia. Polycythemia has been produced in guinea pigs by keeping them in an environment of low-oxygen saturation. When in normal oxygen atmospheres, the polycythemia vanishes, and the icterus index rises with jaundice being evident.

Studies have shown that the bilirubin content of cord blood is several times greater than the content of the mother's blood, and of course the icterus index is correspondingly higher.[1] The cord blood of the new-born also gives an indirect van den Bergh pointing to a non-obstructive type of jaundice. It is the increase in bilirubin in the blood stream which constitutes jaundice of whatever type.

It is also a known fact the cord blood readily hemolyzes and that there is increased fragility of the cord and peripheral blood in infants. This latter observation is apparently due to the increased content of immature forms, namely nucleated red cells and reticulocytes.

It is apparent then that the infant enters this world with a polycythemia, usually showing red cells from five to seven million at birth with correspondingly elevated hemoglobin values. This high count tends to persist during the first week and then slowly falls. There is not any need for the increased red cells after birth. In the natural physiological process evident even in the adult, these red cells are destroyed and the hemoglobin liberated is broken down into bilirubin, the iron free pigment, and hemosiderin, the iron-containing pigment. The bilirubin value rises, and when it reaches a certain point, visible jaundice results. This corresponds to an icterus index of 8-15. As the red cells approach a normal level, the immature forms disappear from the blood and the fragility becomes normal. Such should occur at the end of the first week of life.

Other observations of importance dealing with the mechanisms of jaundice in the new-born are concerned with the efficiency of the liver in that period. By use of the bromsulphalein test, Herlitz[2] has shown a 20-30% retention of the dye occurring in infants in the first month of life. After four months infants excrete the dye as do adults. This retention of dye would seem to indicate liver immaturity with impaired excretory function.

Astrachan[3] notes that a true hemolytic jaundice must fulfill two cardinal points, namely, hyperbilirubinemia, and impairment of the excretory function of the liver. That the liver is impaired is suggested by the dye retention and by the fact that there are no pigment products in the stool in the first two or three days, in spite of a high blood content of bilirubin. Late or delayed ligation of the cord may play a part in increasing the degree of jaundice in the new-born in some cases. Placental blood in amounts of 50 to 60 c. c. entering the infant, with its high bilirubin content, and the increased number of fragile red cells of cord blood with corresponding increase in blood volume, may be easily a factor in increasing the tendency to marked jaundice.[4]

With the foregoing points in mind as the most probable mechanisms responsible for the most common type of jaundice in the new-born, namely, physiological jaundice, it is well that we now consider its clinical manifestations and then the differential diagnosis wherein a discussion of the other types and causative agents of jaundice in the neonatal period will be brought forth. The new-born period probably accounts for about 50% of the jaundice in children, and if physiologic jaundice is ruled out, is a serious symptom of disease with a mortality of about 60%.

Physiologic jaundice in the new-born is normally a mild form of jaundice appearing about the third day or later and tending to clear up in a few days. It is by far the most common type of

jaundice in the new-born. Butler[5] in a study of 1600 babies at Cook County noted 41% of the white babies as jaundiced between the 4th and 7th day. It is well to remember that it takes an icterus index of around 8-15 before clinical jaundice is recognized, and detection of jaundice depends upon good light, etc. The liver and spleen are not enlarged. Nucleated red cells are not noted in the blood after the end of the first week, but may reach 5-10% per 100 white cells on the first day. The jaundice clears rapidly. No bile is noted in the urine and the van den Bergh is indirect. The prognosis is always good and no treatment is needed. As a general rule, it is not difficult to diagnose this type of icterus, but in some cases in which it occurs early or persists longer than expected, or is associated with intracranial injury, one may worry that he is dealing with a more serious form of jaundice, namely, icterus neonatorum gravis. Whenever the clinician has ruled out the ordinary type of physiological jaundice as being the basis for a given case of icterus in the new-born, whatever the cause for the case at hand, the prognosis is a serious one. No other form of jaundice in the new-born carries a more grave omen of danger than that found in cases of icterus neonatorum gravis. Various studies show mortality rates in the realm of 80%. This form may occur sporadically, but is usually familial. Babies showing this type of icterus are usually born of normal pregnancies at full term. Jaundice in these cases is outstanding and may be present at birth or shortly thereafter. It is practically always seen before the third day when we expect to see the ordinary simple, non-serious physiological variety. The jaundice is intense, the infant appears gravely ill, being quite drowsy and prostrated usually. Death may occur quickly. The liver and spleen are both enlarged. There is bile in the stools and the urine also shows bile. These cases rarely recover spontaneously. There is usually an associated anemia, the outward signs of which are masked by the intense jaundice, but anemia is not absolutely an accompaniment. Extensive hemorrhages may occur from the mucous membranes or into the skin. Signs of cerebral irritation may develop in those showing kernicterus, with involvement of the basal ganglia.

Examination of the blood in infants with this type of jaundice is exceedingly important and lends findings almost pathognomonic. The presence of nucleated red blood cells in abnormal numbers is the classical finding. As previously noted, nucleated red cells should not appear in the peripheral blood of the normal infant after the first week. In these cases, however, one usually finds an increase in immature red cell forms, megaloblasts, erythroblasts, normoblasts and reticulocytes. Nucleated cells may reach 25,000 per cubic mm., but cases can occur with no nucleated red cells at all. The anemia usually noted is of a hyperchromic type, a high color index being evident. There is marked variation in size, shape and staining reaction of the red cells and Van Creveld[6] has noted that the characteristic cell is a macrocyte, indicating that the mean diameter of the red cells is increased in icterus gravis. The increase in abnormal blood cells is also seen in the leucocytic series, myelocytes and myeloblasts with numerous band forms of polymorphonuclears being seen. The van den Bergh in these cases shows a markedly increased indirect reaction, and also a direct immediate reaction, really a biphasic response which implies necrosis of the liver cells.[7] The stools contain bile and the urine also shows bile and urobilinogen.

The pathology noted in cases of icterus gravis consists primarily of a generalized yellowish tint of the various organs and serous surfaces with the essential findings being noted in the liver, spleen, kidneys and consisting of islands of extramedullary blood formation. Early forms of both red and white cells are noted. Essentially these cases show a persistence of, or reversion to, fetal blood formation. Degenerative changes have been noted in the liver cells with accompanying necrosis.

There are other clinical aids which should make the physician suspicious that he is probably dealing with a case of icterus gravis aside from the history he frequently obtains of its familial incidence. A very large placenta, yellowish amniotic fluid, or an infant covered with a golden yellow vernix caseosa should immediately place him on guard. Finding of a golden colored vernix caseosa is exceedingly important.

The diagnosis of any type of jaundice can usually be made if certain ordinary laboratory and clinical aids are applied in any given case. On clinical examination one must note the presence or absence of enlarged liver and spleen, color

of stools, and urine for bile pigment. The complete blood count gives evidence of the occurrence of any anemia or erythroblastemia. Syphilis is excluded by Wassermann reaction on the parents and the infant. The van den Bergh reaction is of value in that a pure indirect reaction excludes congenital obliteration of the bile ducts. Very rarely, familial acholuric jaundice may occur in infancy, so the fragility test may be useful to establish the presence of such a disease. Also, the red cells in this disease are usually microcytic.

Astrachan[8] sums up the diagnostic points in icterus gravis as follows:

a. A familial incidence of early, intense jaundice.
b. Pallor.
c. Increased number of nucleated red cells.
d. Enlarged liver and spleen.
e. Postmortem findings of marked hemotopoiesis in extramedullary sites.

This latter pathologic finding of marked persistence of embryonic blood formation in extramedullary centers has been considered widely in pediatric literature under the general term of erythroblastosis fetalis. As previously mentioned, icterus gravis may occur without erythroblastosis, but the prevailing tendency is to consider not only icterus gravis neonatorum, but also congenital hydrops fetalis and congenital anemia of the new-born as a triad, all having the presence of erythroblastosis as the prominent pathological finding. All three commonly show numerous nucleated red cells in the peripheral blood and at postmortem, centers of extramedullary blood formation. If edema is the paramount finding in the infant, it is considered congenital hydrops fetalis; if jaundice is most evident, icterus gravis neonatorum is attached; and if anemia is most prominent, the case is considered one of congenital anemia of the new-born. Erythroblastosis fetalis is a term coined to cover all three, and is usually manifested by jaundice, anemia, edema, enlarged liver and spleen, increased nucleated red cells and evidences of extramedullary blood formation. Erythroblastosis is not, however, entirely confined to the above named conditions. It may be seen rarely in congenital syphilis and also in sepsis. Care must be taken that the blood smear of a case of erythroblastosis be not considered as leukemia (nucleated red cells for small lymphocytes).

It is well that we mention briefly the clinical syndromes grouped under the general head of erythroblastosis fetalis, since they must be considered in any careful differential diagnosis of jaundice and anemia in the new-born period. First, congenital hydrops fetalis or edema of the new-born is usually manifested by generalized edema as the name implies, occurring in infants usually stillborn or dying shortly after birth. The liver and spleen are enlarged and anemia is evident. Jaundice is slight. Postmortem shows marked extramedullary areas of blood formation. Of the three conditions looked upon as erythroblastosis, many consider congenital hydrops fetalis as the most extreme degree of the process, the intermediate being icterus gravis, and the mildest or least severe, as congenital hemolytic anemia of the new-born. In this latter manifestation, anemia is the striking clinical finding with jaundice secondary. Here again there is marked increase in immature red cell forms, particularly a high reticulocyte count. Jaundice may appear quite late. Many of these babies with congenital anemia recover spontaneously, but the results of transfusion are remarkable. A familial incidence has been noted.[9]

One might question or wonder the importance of knowing whether erythroblastosis fetalis existed in a given case. Our main reason for determining its probable presence is because of the grave prognosis attached particularly to two of these clinical syndromes with which it is most often associated, namely, congenital hydrops, which is uniformly fatal, and icterus gravis, which according to Hampson[10] carries a mortality rate of 80%. The early diagnosis is further important because it is only by such that early treatment can be instituted. Treatment to date for icterus gravis with or without erythroblastosis is directed toward early blood transfusions or the use of maternal serum, as suggested by Hampson.[11] Hampson felt that the new-born serum was lacking in some antihemolytic substance until the infant's liver reached functional maturity, the substance having been supplied by the mother in utero. This substance is also present in adult serum. Accordingly, he treated eighteen infants with intramuscular injections of maternal serum with seventeen recoveries. Five to 10 c.c. of serum were given daily. It is a bit difficult to see where this method surpasses transfusions except for its simplicity.

It is not so much for the man in general prac-

tice to know about present theories regarding erythroblastosis, as it is important that he appreciate the probability of its occurrence in cases of anemia of the newborn, icterus gravis and hydrops fetalis, and if present, that he appreciate the gravity thereto and attempt to carry out immediate therapeutic measures to combat the syndrome. It always adds to one's ability to diagnose and treat disease if one appreciates the underlying theory, therefore I mention briefly that there are two schools of opinion, the American and the British, who hold diverse views as to whether erythroblastosis fetalis is a primary disorder with hemolysis secondary (American), or whether hemolysis is primary and erythroblastosis secondary (British). It is not necessary here to defend or discuss either theory, but certainly the latter seems more logical, whereby one considers hemolysis due to some cause as the primary process, which if marked or not checked, leads to rapid blood destruction, jaundice, anemia and the calling into play of the already overactive centers of infantile hematopoiesis with a resultant flooding of the peripheral circulation with nucleated red cells, constituting erythroblastemia, with the associated presence of numerous foci of extramedullary blood formation showing intense blood regeneration. The mere presence of extramedullary foci of blood formation is not enough to make the diagnosis of erythroblastosis, since extramedullary centers for blood formation exist in full-term infants, and especially in premature infants.[12] Erythroblastemia is found at birth and it is only when the numbers of immature cells are increased or excessive and persist beyond the first few days of life that the condition is considered abnormal. This normal status of blood in the first few days must be remembered before making any rapid conclusions as to the presence of true erythroblastosis fetalis.

It is seen then that the matter of the absence or presence of erythroblastosis is mainly a question of degree and rests upon pathologic findings primarily. The frequency of erythroblastosis has been estimated at one per four hundred births and accounts for 3-5% of new-born deaths.[13]

Lippman[14] has reported a case in the newborn showing 38% nucleated red cells per hundred white cells with no sign of prematurity or abnormality, only the presence of jaundice, which was considered as purely physiological. The presence of nucleated red cells in the blood at birth is more marked in prematures, in whom it may be said that a more embryonic type of blood exists than in the full term baby. Such cells are also seen in sepsis, congenital syphilis and congenital heart disease, or whenever unusual demands for blood regeneration are placed on the infant's hematopoietic system.

There are a few other conditions which one must consider as possible causative agents for icterus in the new-born. Probably next in importance are those cases due to sepsis, which is probably as important a factor as icterus gravis from the standpoint of prognosis. This type of jaundice tends to occur later than icterus gravis, the infant is ill usually with fever, vomiting and often diarrhea, and evidences of a focal infection, usually at the umbilicus or of the skin, alimentary, or pulmonary tract. Cyanosis associated with jaundice is suspicious of a sepsis. The temperature may be normal in these cases. Late deaths following tardy jaundice are more apt to be due to sepsis, while early deaths following appearance of early jaundice are more apt to be due to disturbance in the hematopoietic system.[15] It is likely that sepsis is really responsible for many deaths attributed to icterus gravis neoratorum. Careful study and more routine use of blood cultures in obscure jaundice cases are indicated.

The following case report illustrates some of the pertinent findings in a case of jaundice in the new-born due to sepsis.

Baby B., born at St. Mary's Hospital, Quincy, Illinois, in October, 1934. Normal pregnancy. Full term, only child. Weight 6 pounds and 10 ounces. No history of familial icterus. Artificially fed. Went home from hospital apparently well four or five days after birth. Brought back to the hospital at two weeks of age, when I first saw the child, with history of jaundice having been noted by grandmother when baby was one week old. Coincident occurrence of vomiting and diarrhea, with rapid weight loss. Bile present in the stools. The jaundice was progressively increasing.

Findings on admission were those of acute toxicity, anhydremia, generalized and intense icterus of a greenish hue, spleen felt two fingers below the costal margin and liver down one finger. No hemorrhages noted. Fontanelle not tense. There were numerous areas of bullous impetigo in the groins. The cord was off, but the umbilicus was not healed, showing a dusky, reddish discoloration of the skin for 4-5 cm. around the navel, and pus was exuding. Palpation revealed cord-like vessels ascending toward the liver. The temperature did not exceed 100° R. at any time during the hospital stay.

Laboratory work revealed a negative Wassermann, a sterile blood culture, a CO_2 of 28 vol. %, and a red

blood count of 5,980,000 with hemoglobin of 111% (dehydration), with 54% total polys—2% myelocytes, 20% stabs, 35% lymphycytes and 11% mononuclears. The red cells appeared normal. No normoblasts seen. The white count was 18,800. The urine showed a three plus albumin with numerous granular hyaline casts and no bile.

The diagnosis was that of a septic jaundice, secondary to infective omphalitis or bullous impetigo, with associated diarrhea and anhydremia.

Treatment consisted of antiseptics locally to naval, transfusions and molar lactate intravenously and subcutaneously, with protein milk by mouth. One month after entry the child was discharged well, with no jaundice persisting, with a normal blood picture, and gaining weight.

Congenital obliteration of the bile ducts must be considered in those babies showing early jaundice, of increasing intensity, associated with no bile (clay-colored stools), and an enlarged, hard liver. The van den Bergh reaction is direct, and there is an absence of nucleated red cells. The jaundice may be slight for awhile and bile may be present in the stools for some time, indicating a progressive obliteration of the ducts. The tendency to hemorrhage is quite great. Usually the child dies in a few weeks or months. If the obstruction is in the common duct, it may be possible to unite the gallbladder and bowel, but usually the underlying liver damage is so great that the results are valueless.

Atrasia of the duodenum may be accompanied by jaundice if the obstruction is below the ampulla of Vater. Signs of intestinal obstruction are most valuable in suspecting this condition, vomiting of bile, constipation, upper abdominal peristalsis and distension.

Congenital syphilis is rarely a cause of jaundice. Astrachan[16] noted only one infant with jaundice in 48 cases of congenital lues. The occurrence of erythroblastosis with congenital syphilis is evidenced by the following case.

Baby D.: Born in St. Mary's Hospital, October 30, 1932, and died November 4, 1932. There was one other living child in the family, with no history of miscarriages or stillbirths. Labor was normal with spontaneous resuscitation. No convulsions or cyanosis noted. Baby was premature, of seven to eight months' gestation, weighing four pounds twelve ounces at birth. No jaundice noted at birth. Bleeding was noted as a persistent ooze on the second day of life. There were several petechial areas on the scalp and one small blood blister on the hand noted at birth.

On examination the child was fairly well nourished with a slight general icterus. Fontanels were bulging and tense with a wide open longitudinal fissure. There was a prominent forehead with a suggestive sunken nasal bridge. The chest and heart were negative. The liver and spleen were both palpable. There was oozing of blood from the navel. Blood count on the day following birth revealed a WBC of 28,400, RBC 2,880,000, hemoglobin 63%, color index 1.1. A marked aniso and poikilocytosis with polychromatophilia and a nucleated red cell count of 7%. On November 1, 1932, the nucleated reds amounted to 22%, and on November 4, 1932, had reached a figure of 50 per 100 white cells. Bleeding time was three minutes and coagulation time, 15 minutes. Platelet count was 334,000 per cubic millimeter. A Kahn test was four plus on the blood. The mother's Kahn was also found to be positive. The baby's spinal test revealed increased pressure, with the fluid xanthochromic and slightly cloudy, with a cell count of 800, of which 94% were lymphocytes. Kahn test on the spinal fluid was two plus. There were no bacteria noted. Fresh and crenated red cells were present.

The diagnoses were as follows: 1. Congenital syphilis with erythroblastosis. 2. Prematurity.

The baby was given blood and sulpharsphenamine intramuscularly and fluids under the skin, but in spite of such therapy became increasingly more moribund and intensely icteric, with the blood smear showing increasing erythroblastosis, and died five days after birth. Postmortem examination was done which revealed the following cardinal findings: A markedly jaundiced baby with areas of purpuric hemorrhage scattered over the body. Heart and lungs were essentially negative. The liver weighed 105 grams and microscopically showed many areas of arythroblastosis, with numerous normoblasts and megaloblasts and associated areas of leukopoiesis with young white cells. There was much pigment in the liver cells. No spirochaeta pallida were noted in the liver. The spleen was also markedly enlarged, weighing 15 gms., with similar deposits of pigment and similar areas of erythroblastosis as were found in the liver. The kidneys were normal. The pancreas also showed areas of erythroblastosis. Examination of the femur showed a regular line of ossification, which was not yellow, but was clear and translucent. Syphilitic osteochondritis of the femur was not present. Examination of the brain revealed a large blood clot at the base with numerous hemorrhagic areas over the cortex. Pathological diagnosis was that of erythroblastosis fetalis (liver, spleen, and pancreas) and intracranial hemorrhage. In spite of the negative findings of any spirochetes in the liver, and the negative evidence of lues as manifested in examination of the femur (syphilitic osteochondritis will frequently not be detectable at birth) I feel certain that this case was a case of congenital syphilis associated with erythoblastosis, which was the cause for jaundice in the newborn.

The important diagnostic aids are usually: Wassermann reaction on the parents and infant, clinical findings of lues in the infant, x-ray of long bones, and search for spirochetes in the tissues.

Winchel's disease produces intense jaundice and bronzing of the skin and the presence of hemoglobin in the urine, with chocolate colored

discoloration of the blood and rapid anemia. Cyanosis and hemoglobin products in the urine are the main points in distinguishing it from icterus gravis.

As a final remark on jaundice in the new-born, prematurity with its associated greater tendency to embryonic blood responses must be mentioned. Normally we expect a premature baby to show an earlier, more severe and persistent type of physiologic icterus than the normal infant. This tendency to excessive hemolysis in prematures makes it very difficult to rule out icetrus gravis in prematures. Usually no splenomegaly is present and the infant is not gravely ill as in icterus gravis.

As noted previously, I have mentioned anemia of the new-born as one of the triad of syndromes grouped under the head of erythroblastosis fetalis. Congenital anemia in the new-born does occur with and without erythroblastosis, in some cases there is apparently no evident blood regenerative activity with anemia resulting. Rarely are babies born anemic. It is usually agreed that nutritional deficiency in the mother does not lower the hemoglobin level of her child at birth, but does lessen the infant's iron store. Mackay[17] states that there are two main causes of anemia in the new-born, bleeding and excessive hemolysis. Approximately fifty cases of congenital enemia of the new-born have been reported, it being a quite rare disease. Some cases of congenital anemia, as noted above seem to be due to failure of blood regeneration or maturation, and the infant shows no evidences of excessive hemolysis, such as jaundice, high bilirubin, etc. These cases are the ones in which one would expect the greatest value from liver and iron. The anemia is of a hyperchromic type, being present at birth or in the first two weeks of life, in infants born of healthy parents. Proven cases of blood diseases, such as pernicious anemia and leukemia in the mother are not transmitted to the infant. The anemia has been reported in several offspring of the same parents and in families where one child may show icterus gravis and the next anemia of the new-born. The disease is characterized mainly by intense pallor, which may be masked early by jaundice. Jaundice is not, however, a constant accompaniment. The liver and spleen are usually enlarged and there may be slight edema. Fever is not usual. The infants do not seem very ill, and recovery is often spontaneous and complete between the third to sixth month. About 10% die. Autopsies on fatal cases have usually shown marked erythroblastosis, but Cohen[18] has felt that erythroblastosis is not a necessary finding. The diet or health of the mother does not seem important. Iron and liver extract have been used in treating these cases, but it is hard to evaluate such treatment. There is no evidence of iron deficiency. Certainly transfusions seem wise if the anemia is severe, and one cannot imagine handling such cases without such aid.

Huenekens[19] reported a case of anemia in the new-born treated by transfusions with frequent rises and falls in the red count and hemoglobin, which finally seemed to be prevented by liver extract intramuscularly, one c.c. every two to three days.

Krost[20] treated three cases of anemia of the new-born associated with severe jaundice with daily injections of human serum, 10 to 12 c.c. intramuscularly from one to four days, after the theory and method of Hampson, with marked improvement.

Limitation of this paper to the discussion of anemia in the new-born era, of course tends to eliminate that major group of deficiency or nutritional anemias so common in the later months of infancy, the anemia of scurvy and the anemia of prematurity, which usually comes at two to four months. The neonatal period also eliminates the anemia secondary to infection and blood dyscrasias, which of course may appear in the first month of life, but do so very rarely. The so-called constitutional hemolytic anemias, such as Cooley's erythroblastic anemia, sickle cell anemia and congenital acholuric icterus are mentioned because of their congenital element, but they rarely lead to clinical significance in the first period of life.

In conclusion, I have attempted to bring to you:

1. A regime of the mechanisms underlying physiological icterus in the new-born.

2. A discussion of the etiological factors productive of jaundice in the new-born with essential points in the differential diagnosis of the various clinical syndromes associated with jaundice.

3. Attempt has been made to stress the simple diagnostic, clinical and laboratory aids which every physician should have at his command, as

being sufficient to allow arrival at a correct and satisfactory diagnosis in the usual case of jaundice in the new-born.

4. Attempt has been made to clarify and stress the inter-relationship between congenital hydrops, icteric gravis and anemia of the new-born, with the usual pathological accompaniment of erythroblastosis. A plea is made that the obstetrician occupies the strategic point in the diagnosis of these conditions in that he should look for and recognize the importance of a yellowish vernix caseosa, yellowish amniotic fluid and an enlarged placenta usually associated with anemia, jaundice, edema, hemorrhages. Any man delivering a baby showing any of these signs should immediately examine the child for an enlarged liver and spleen, and if such is present, the suspicion of erythroblastosis of the new-born should be entertained. Immediate examination of the stained blood smear will aid in clinching the diagnosis. Early recognition with early treatment by transfusions or whole blood serum will save many of these babies.

5. A case history illustrating the findings in a case of jaundice due to sepsis, and another case showing erythroblastosis associated with congenital syphilis are reported.

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DISCUSSION

Dr. Gerard N. Krost, Chicago: I want to stress what Dr. Whitaker has said that the obstetrician should be on the lookout for the symptoms of icterus gravis by noting the bile stained amniotic fluid and enlarged placenta.

Another point of importance that he has not stressed so much is the communal incidence. This condition occurs in subsequent siblings. There may be one or two normal infants and then the next baby have one of these conditions: icterus gravis, stillbirth with edema, congenital anemia. If a woman has given birth to a baby with any one of these conditions, any subsequent infant should be watched very carefully and treatment instituted before symptoms arise.

I do not want to go into the etiology because that is very mixed up, but if I heard correctly, Dr. Whitaker ascribed the symptoms to the excess amount of bilirubin and blood destruction in this condition. I believe that that is hardly true because in congenital obliteration of the bils ducts there are very few symptoms. The probabilities are, as gathered from most of the literature, that it represents both a liver damage and a myelocytic damage. In other words, something affecting the blood forming structures and liver.

The treatment, of course, can be by whole blood or serum but, after reviewing the literature, some claim that whole blood injections fail to cure these infants. It is probable that transfusions should be used early, starting with whole blood or blood serum injections while waiting for typing, etc.

Dr. A. H. Parmelee, Oak Park: I think this has been a very excellent discussion of the subject. I want to emphasize the point that probably all new-born infants have icterus neonatorum in the sense that they have a blood icterus. There is an increase of bilirubin in the blood of every new-born infant, but I think it is not strictly true that the degree of bilirubinemia is an index of whether or not skin icterus will be observed. A good many experiments have shown that there are many other factors that account for the presence of skin icterus, and that is why our statistics are so "cock-eyed" in regard to the incidence of icterus neonatorum. If you try to observe icterus neonatorum and account for the presence or absence of it, your results will depend upon when you examine the infant, the light, the amount of subcutaneous fat, the character of the skin, the amount of edema present, the kind of pigmentation of the skin, and other factors. Any of you who have seen many negro infants know how difficult it is to tell whether they are yellow or not. I think all we have to do is to remember that all new-borns have bilirubinemia physiologically, and whether they have skin icterus is not so important. When Blackfan's work on Erythroblastosis came out I found that all of my interns at the County Hospital were making blood slides on every case that showed icterus and they were all finding that the babies had erythroblastosis of the new-born. We must remember that erythroblastosis is normal in the new-born infant in the first few days. A normal amount of erythroblasts must be found in the normal infant and the presence of a few of these cells does not by any means indicate erythroblastosis. Premature infants almost invariably have visible icterus of the skin and sometimes to a marked degree and even then it may be within physiologic limits.

Dr. Walter M. Whitaker, Quincy (in closing): I think Dr. Krost's remarks about early treatment before symptoms ensue is a very excellent point, in those new-born infants where one is led to suspect the possibility of icterus of a gravis type developing.

I steered away from the etiology but brifly,

since it was brought up, I studied the literature fairly carefully and I feel that I side in with the British idea that hemolysis is the initial factor. The primary cause of hemolysis remains unknown but the blood picture is that of a marked regenerative process such as we might see in the blood of any infant with syphilis or sepsis or any condition in which there is marked destruction of the blood which calls for an increased regenerative process. The American theory is the reverse. Most American writers believe that erythroblastosis is a primary phenomenon and hemolysis a secondary factor.

I am very grateful to Dr. Parmelee for his remarks about icterus being a constant finding in every new-born baby. It is a matter of detecting its presence. The points about normal blood pictures must never be forgotten and we must remember that premature new-born infants may show 7 to 10 to as high as 38% nucleated red cells, but when these findings persist over a week and in percentages ranging as high as 50%, certainly then one is justified in making a diagnosis of erythroblastosis.

FEEDING OF FULL TERM INFANTS DURING THE NEW-BORN PERIOD

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In attempting to present such a broad subject, one must consider three people who are most involved and around whom I wish to build my part of this symposium; namely, the baby, the mother, and the doctor.

Theories on infant feeding have been widely discussed during the last twenty-five years by both the general practitioner and the pediatrician; but we still have the problem of how to manage the new-born to make him a happy, satisfied, growing baby causing as little mental and physical worry as possible to the mother and giving, because of its physically fit condition, satisfaction to the doctor employed. In other words, practicability is the keynote; with satisfactory results regardless of so many theories.

Given the new-born as a feeding problem, first of all the doctor must decide whether the infant is to be considered as either a normal or a pathological case and must then treat him accordingly.

The normal new-born must be defined as the infant whose general appearance, color, cry and actions are normal, who has ability to nurse, retain food and excrete its by-products, and whose general physical examination meets the standards of normal. Because most babies born are of this type, they must be considered first.

The new-born period must be defined. This seemingly has no standard measure of time; however, I like to consider the new-born period from birth to one month of age. Usually by that time any possible congenital conditions or any abnormalities have made themselves known.

The normal new-born then during the first month of life presents three practical problems: proper food, weight gain, and happiness.

I feel that the dehydration period of the first few days is of great importance. Water, or water and glucose, will control dehydration. As you know from a weight loss standpoint there is very little appreciable difference between water and cow's milk feedings. Therefore, I routinely give a Beta Lactose solution, starting with a feeding a few hours after birth and continuing with it after each breast feeding throughout most of the first week of neonatal life. By this time, if breast milk is sufficient, the Beta Lactose solution is stopped. I am confident that this procedure increases the number of successful breast fed infants. First of all the baby is not filled up with a formula that tastes sweeter than breast milk and makes him so lazy that he refuses to nurse.

Needless to say, breast milk still is the most desirable food. The technique of breast feeding continues to be an urgent problem. As contented cows make good milk, so contented mothers nurse more infants. If there is not sufficient breast milk, a very helpful procedure is the thorough emptying of the breasts after nursing. The electric breast pump is an invaluable addition to the equipment of any nursery. Its usage also stimulates the secretion of the breast as well as empties it.

Although I do not intend to discuss in this paper specific formulae for complementary and supplementary feeding, I definitely believe that evaporated milk has been proven the milk of choice as a complementary or supplementary feeding, if such a feeding is needed. However, I do admit that the percentage of incompatibilities even with this milk is much higher than generally conceded. The most important practical procedure that I have learned and followed routinely during the last five years is abstaining from the feeding of any form of cow's milk as long as possible to the new-born. According to physiologist, the generalization is made that the gastric mucosa of the new-born infant is suffi-

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ciently developed to secrete normal gastric juice with the exception that it is slightly lower in acidity and ferment concentration (pepsin and rennin). The pepsin splits proteins into simpler and more soluble proteins, and rennin separates the milk proteins preventing the more rapid passage of casein into the intestines. Under normal condition very little, if any, absorption occurs in the stomach. In the intestines then the digestive products are almost wholly absorbed. It is also believed that the mechanism of alimentary food sensitization and intoxication is not simple. Therefore, I firmly believe that artificial feeding during the first few days of life sensitizes many infants to cow's milk protein and is a forerunner of colic, eczema, exaggerated vomiting and other allergic conditions evidenced in later life.

The vitamin story must not be neglected. During the last few years the incidence of infantile tetany and scurvy has been greatly reduced. Recent literature, however, leads us to believe that vitamins C and D deficiencies in slight degrees are often apparent. Certainly the early administration of these vitamins is very advisable. Along this line, with my particular interest in the allergic infant, I am quite confident that orange juice is a very common reactor in the new-born. The fish oils likewise, though less commonly, may be the cause of gastrointestinal disturbances. In fact, the ingestion of either may excite the nasal mucous membranes causing symptoms of acute coryza in the very young. Artificial foods containing orange juice and cod liver oil at times must be considered as potential factors in allergic disturbances. The crystaline vitamins C and D products on the market today are, to my way of thinking, a better medium of supplying vitamins to the allergic or potentially allergic infant than the giving of orange juice and cod liver oil.

The frequent cause of colic and vomiting is the swallowing of air during the act of nursing. This particular phase of the feeding process has never received enough attention. It should become a prime feature in the education of the nurse and the mother. They should realize the necessity of the mother being in an upright position during the breast feeding, the holding of the bottle by an attendant during the bottle feeding, and the placing of the baby on the shoulder for it to belch one or two times during the feeding process and always after the feeding is ended. The importance of this procedure cannot be overemphasized since milk regurgitated through the nasal passage is often the cause of respiratory infections and otitis media.

Feeding time schedule has become a debatable subject among mothers, nurses and doctors. I cannot subscribe to maintaining rigidly a three or four hour schedule, to omitting night feedings routinely, to allowing only a limited nursing time; which regulations we pediatricians so oratorically taught mothers and nurses not so many years ago. The farmer does not carry out a strict routine in the successful nursing of domestic animals and after all Mother Nature is an excellent teacher. I must say, however, that I do not approve of the unscientific way of handling the feeding of the new-born that was practiced years ago and still is done among certain classes of people. There is a happy medium which can be maintained.

The pathological new born, though much fewer in number than normal new-born, present many and more varied problems, such as cerebral insults, icterus, anemias, deformities, severe vomiting and diarrheas.

Most of the essentials in the feeding of the normal infant apply to the problems of the pathological child. With him, as with the normal child, the water balance is the paramount issue in the beginning. Our recent knowledge of giving additional fluids extra orally has been our greatest help in maintaining this. No infant need die of fluid starvation. The feeding of choice is breast milk. The recent process of freezing breast milk has aided in making this possible. Other successful accessories for feeding the pathological child are oxygenated incubators, Brecht feeders and nasal catheters.

Three important practical points for the welfare of the infant are worthy of mention. The obstretician should teach the prospective mother the proper care of her nipples during and after the prenatal period in order to insure breast feeding. She should also be informed of the importance of clean hands in caring for the child and warned of the danger of permitting outsiders to handle it, thereby protecting it from impetigo and other infections. She should, if possible, have the help of a graduate nurse during the adjustment period of one or two weeks after her return from the hospital. This can be accomplished by foregoing the "special nurse's" care during hospitalization, where she and the baby may receive adequate service from the general

hospital nursing staff. I can not overemphasize the necessity of competent care for the faltering three or four weeks' old infant, who all too often falls into the hands of friends, neighbors, or relative at the most critical period in his early life.

How then may the doctor be assured of success in getting the mother to carry out his program for the new-born? The building of the parents' confidence in the doctor is the first essential. This can best be done during the prenatal period. That is the time for the doctor to counteract the morbid stories of friends and relatives which all too often weigh heavily upon the mind of the pregnant woman. A kindly interest in her and the personal regard for the child when it arrives will establish the confidence necessary to obtain her co-operation in carrying out the doctor's program for the child's proper development. All of this should insure a healthy baby, happy parents, and consequently a gratified doctor.

DISCUSSION

Dr. C. G. Grulee, Evanston: As Dr. Cline indicated, I am a nut on the subject of breast feeding, but I want to tell you some of the experiences we have had at Presbyterian Hospital in respect to this. Some years ago the interns on the pediatric service were sent into the homes of the out-patient obstetric service to take care of new-borns. After keeping case records of these patients, we found that these children, at least 98% of them, were leaving the lying-in period on the breast. On looking over the records in the wards of the hospital, we found that less than 50% of the women of the same category were nursing their babies when they left the hospital and we began to look into the situation. We found out that if we did not give these babies bottles or artificial food for the first week, we were able to raise the percentage of children that went out on the breast to something like 90%. That there was such a difference between 98 and 90% might be due to the fact that more of these cases in the hospital were pathologic, but the fact still remains that a determined effort in the hospital, to see that the child was hungry and developed the breast, proved to us that these mothers could nurse their babies under proper conditions. In other words, it seems to us the secret of nursing a baby is not to give it a bottle in the first few days of life and thus satisfy its hunger and prevent it from developing the breast in the only way in which the breast milk will be developed and that is by suckling.

Another thing is in respect to skin conditions of the new-born. There has been a great deal of work done regarding bathing the new-born and how the skin should be protected against impetigo, etc. Some years ago Dr. Sanford started out on a definite problem to determine what would happen to the skin of a new-born if it were taken care of in various ways. He has tried out several ways and has found that the erythema and slight papular conditions which occur in the new-born occur in the same percentage of cases under all conditions and he has found that if you do not bathe the baby for the first week it reduces very markedly the infectious conditions in the skin, so much so that, while we had had no impetigo in that period we had had pustules repeatedly, but in his trial there has developed one pustule in one baby in a period over six months to a year. That means that probably interference with nature is largely responsible for infectious conditions of the skin rather than the prevention of such infections by overmedication in the form of antiseptics. I think it is interestng that in Dr. Sanford's experiences, the group in which he used the antiseptic oils developed the largest number of skin infections.

Dr. T. P. Saltiel, Chicago: I think the mother should watch the cow and learn how the calf takes its feedings. I believe in regularity of feeding and I think the four hour interval is ideal. If she should watch the cow she would notice that there is a definite regularity of feeding there. The mother should not be made a slave to her baby, as that defeats our purpose of forming good habits.

Dr. A. J. Fletcher, Danville: I wish to take issue with the Doctor. If he has ever observed the cow, he has noted that the cow does not let the calf nurse every time it wants to.

Dr. Gerald M. Cline, Bloomington (in closing): Although I do feed Beta Lactose water or plain water by bottle the first two or three days, I have no doubt that Dr. Grulee's suggestion of refraining from the use of anything by bottle or nipple would be a good routine to follow.

I am also happy to know that Dr. Grulee advocates no baths. For the last two years in one of our hospitals the baby gets its first bath as a demonstration to its mother the day of discharge. We are confident that we have reduced the incidence of skin troubles in our nursery.

Dr. Saltiel, most mothers like to know the "reasons" for your ideas. If you as the doctor have built up her confidence in you she will accept these ideas, regardless if some of them are compared to animal life. A great many new-borns are hungry and will be happier if fed when hungry and not by the watch. There are, of course, exceptions to all rules.

In closing I am sure several of us during the last fifteen years have been called upon to examine babies at state and county fairs. Fortunately for all concerned this "baby show" is becoming a thing of the past. The doctors' office is a much safer and better examining room. Perhaps you agree that most infants from birth to six months are so perfect that a winner is hard to select, but in the age group from six to nine months up to eighteen months to two years, the blue ribbon baby is even sometimes not worthy of selection. Therefore, something goes wrong after the sixth month period. Education of the parents and more attention by the medical profession will further benefit our subject the "baby."

I wish to thank the discussants.

PULMONARY EMBOLISM AS THE PRIMARY CAUSE OF DEATH IN 10,650 NECROPSIES

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Pulmonary embolism frequently is a subject very prominent in the minds of surgeons. The conditions exemplifies one of the most dramatic catastrophies, especially following surgery.

Recently our interest has been stimulated in this subject because of two cases that were encountered post-operatively. A review of the autoptic cases of pulmonary embolism as the primary cause of death at the Cook County Hospital from January, 1929, until March, 1938, was made. In studying the cases many interesting features were noted.

In the years 1929 to 1938 there were 10,650 consecutive autopsies performed at the Cook County Hospital. In this group of consecutive necropsies 25 cases of pulmonary embolism were encountered. There has been much literature written upon this subject and it is the purpose of this paper to add our statistics to those previously published. In an article recently published by Barnes,[1] he quotes McCartney's series of 14,419 cases, and Collin's series of 10,940. In the former, the incidence of pulmonary embolism was 2.72%, and in the latter 2.07%. A combination of these two series makes a total of 25,359 cases and an incidence of 2.36%. In our series of 10,650 cases the incidence of pulmonary embolism was found to be 0.234%. In addition to the above, our figures have been added, making a total of 36,009 cases and an incidence of 1.67%. It appears evident from the above figures that in a large series of cases coming to autopsy the incidence is infrequently encountered.

Included in our series were both surgical and medical cases. There were 14 or 56% of the total cases that occurred post-operatively (see table 1). In 11 or 44% of the cases there was no associated surgery (see table 2). The type of operation was found to be almost entirely limited to the abdomen or pelvis. Six cases were of a gynecological nature. Two were supracervical hysterectomies, one salpingectomy and oophorectomy, one panhysterectomy, one supracervical hysterectomy and salpingo-oophorectomy, and a laparotomy for adhesions caused by a previous myomectomy and appendectomy. Three had had appendectomies; two herniotomies; two post natal; and there was one case following the closure of a ruptured duodenal ulcer. The number of days post-operatively in which the disaster occurred varied rather markedly, the least number being seven and the most 20 days.

As to the age of the patients in our group of cases it was definitely noted that there was a marked increase in the number of individuals past 40 years of age. The ages varied considerably, however, the youngest being 16 years of age, the oldest 66 years of age, the average being 41.4 years of age.

As to sex, 71.4% of the cases were found in females, five white and five colored; 28.6% in males, three white and one colored; 56.8% of the cases occurred in the white race and 43.2% in the Negro race.

The incidence of cardiac disease in our surgical cases was rather remarkable. McCartney[2] states that the incidence of pulmonary embolism is doubled when there is a coexistent damaged heart. Our findings closely approximated his results. In our series there were nine or 64.3% of the cases in which there was an associated heart condition. There were five or 35.7% of the cases in which there was no associated heart findings. The condition of the heart at autopsy varied from a slight to a marked eccentric hypertrophy.

Another interesting feature was the determination of the number of cases in which there was an accompanying venous thrombosis. 11 or 78.5% showed evidence of thrombosis, while three or 21.5% showed none. The original sites of the thrombus found, in order of their frequency, were the veins in and about the pelvis, namely, the common, internal and external iliacs, hypogastrics, femorals, ovarian, uterine and the periprostatic plexus. The source of the embolus could not be determined in one case.

In the surgical group of 14 cases the location of the embolism was found as follows: in 10 or 75.7% of the cases the embolism was located beyond the bifurcation of the pulmonary artery occluding both branches; three or 21.4% of the cases occurred in the left branch of the pulmonary artery; one or 2.9% of the cases occurred in the pulmonary artery proper before

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its bifurcation; and, in none of the cases was the right branch of the pulmonary artery alone occluded.

The medical group of cases in our series not associated with surgery were quite similar to the surgical cases in some respects. The average age in this group was 54.5 years, the youngest 33 years of age, and the oldest 79 years of age. These figures were slightly higher than those of the surgical group of cases. Of the eleven cases, 91% were females, six white and four colored; 9% were males, one white and none colored, or 6.36% were white and 36.4% colored.

The incidence of cardiac disease in the medical cases was even more striking than in the previous group of cases. Nine or 81.9% showed some organic change, while two or 18.2% showed no change. Here also the pathology varied from a slight eccentric hypertrophy of the heart to a marked dilatation of all the cardiac chambers.

An associated venous thrombosis was found in nine or 81.8% of the cases. There was no evidence of thrombosis in two or 18.2% of the cases. The primary location of the thrombus varied but, as in the surrounding group, it was most commonly found in the veins of the lower abdomen and pelvis. In order of their frequency they were as follows: the common, internal and external iliac, femoral, and the hypogastric veins. Mural vegetations were noted in the right auricle in a case of rheumatic heart disease with an associated fibrillation, and in the superficial veins of the lower extremity. There were two cases in this group in which no primary source for the embolism could be determined.

The location of the embolism was as follows: eight or 72.7% occurred beyond the bifurcation

TABLE 1. SUMMARY OF 14 CASES OF PULMONARY EMBOLISM
(Surgical)

No.	Sex	Age	Race	Condition of heart as to hypertrophy	Pulmonary Artery or its branches involved	No. of days post-op.
1.	F	36	C	Marked	Right and Left	15
2.	F	30	C	Slight	Right and Left	10
3.	F	48	W	Moderate	Right and Left	14
4.	F	35	C	Slight	Right and Left	10
5.	F	41	C	Marked	Right and Left	20
6.	M	66	W	Slight	Right and Left	8
7.	F	18	W	Normal	Right and Left	9
8.	F	40	W	Slight	Left Branch	12
9.	F	36	W	Normal	Pulmonary Art. proper	8
10.	F	54	C	Moderate	Right and Left	17
11.	M	16	C	Normal	Left Branch	8
12.	F	56	W	Normal	Left Branch	16
13.	M	53	W	Moderate	Right and Left	9
14.	M	48	W	Normal	Right and Left	7
	M— 4	Aver. Age	C—6	Heart c changes —9	Right and Left —10	Aver. No.
Totals	F—16	41.4 yrs.	W—8	Heart c no changes —5	Right branch — 0	of days
					Left Branch — 3	post-op.
					Pulmonary Art. proper — 1	11.6 days

TABLE 2. SUMMARY OF 11 CASES OF PULMONARY EMBOLISM
(Non-surgical)

No.	Sex	Age	Race	Condition of heart as to hypertrophy	Pulmonary Artery or its branches involved
1.	F	69	W	Marked	Right and Left
2.	F	62	C	Slight	Right and Left
3.	F	33	W	Slight	Right and Left
4.	F	46	C	Moderate	Right and Left
5.	M	41	W	Slight	Right and Left
6.	F	39	C	Slight	Left Branch
7.	F	39	W	Marked	Right and Left
8.	F	79	W	Marked	Right and Left
9.	F	62	C	Normal	Pulmonary Art. Prop.
10.	F	67	W	Slight	Right Branch
11.	F	57	W	Normal	Right and Left
	M— 1	Aver. Age	C—4	Heart c changes —9	Right and Left —8
Totals	F—10	54.5 yrs.	W—7	Heart c no changes —2	Right Branch —1
					Left Branch —1
					Pulmonary Art. Prop. —1

of the pulmonary artery occluding both branches; one or 9.1% in the right branch; one or 9.1% in the left branch; and one or 9.1% occurred in the pulmonary artery proper before its bifurcation.

In the years 1929 to March, 1938, it was observed that the greatest number of cases occurred in March and October (see Fig. 3). This

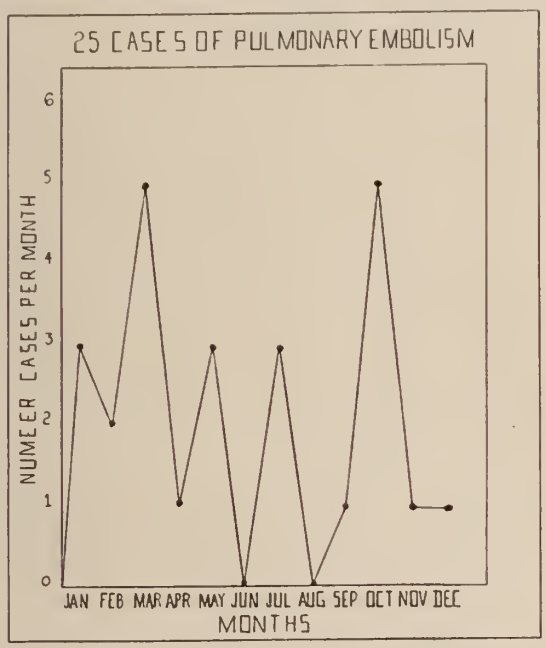


Chart 1. (Figure 3). Note that during the months of June and August there were no cases of pulmonary embolism, while March and October showed the largest number (five cases each).

was an interesting observation in that these are the months in which the greatest climatic changes occur. The peaks were in accordance with the observations of Peterson.[3] He points out that it is at these times of the year in which the "critical points" are reached. The extreme variations in the temperature, whether it be hot or cold, and the fluctuating barometric pressure, whether it be high or low, produces what he terms an "episode." He also states that the greater the variation between these two factors, the more likelihood that an episode may be precipitated.

The cases were plotted in graphic form and noted that there was a marked difference in the temperatures and barometric pressures. The last two surgical cases encountered occurred during an "episode." One may suggest that there is some correlation to Peterson's studies (The Patient and the Weather). The question at once arises: Were these mere coincidences or was there some association to the climate? More observations will have to be made before such a question can be answered to everyone's satisfaction.

Discussion. Infection and venious stasis were the two most frequent findings at necropsy in the surgical group of cases. Marked dilatation of the cardiac chambers, emphysema and passive congestion of the lungs were observed in the majority of the cases. In the non-surgical group of cases, hypertensive heart disease and a sluggish circulation precipitated thrombosis in the pelvic veins and in the iliac veins or its branches.

In the surgical group of cases, early mobilization of the patient may often avert the formation of thrombi and thus avoid the catastrophy of pulmonary embolism.

Summary

In a series of 10,650 necropsies, 25 cases of pulmonary embolism as the anatomical cause of death were encountered.

There were 14 surgical cases and 11 non-surgical cases. Death usually occurred seven to 20 days post-operatively. Infection and cardiac failure were the usual precipitating factors in the formation of pulmonary embolism. Improvement of the circulation and early mobilization of the surgical patient will frequently prevent embolic occlusion of the pulmonary artery or its main branches.

The age incidence varied greatly. The youngest patient was 16 years of age, while the oldest patient was 79 years of age. The average age for our series was 46.8 years; 96% of the cases occurred above 30 years of age; 64% of the cases occurred above 40 years of age; 40% of the cases occurred above 50 years of age.

20 or 80% of the cases occurred in females, while five or 20% occurred in males. 60% occurred in the white race, 11 females and four males; 40% were negroes, nine females and one male.

In the total series there were 18 or 72% of the cases in which there was some associated heart changes. Seven or 28% of the cases showed no heart changes.

The thrombus was located in both branches of the pulmonary artery in 18 or 72% of the cases; the right branch in one or 4% of the cases; the left branch in four or 16% of the cases and the pulmonary artery proper in two or 8% of the cases.

An associated venous thrombosis occurred in

19 or 76% of the cases. There was no accompanying venous thrombosis in six or 24% of the cases.

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CASE FINDING; A METHOD IN THE CONTROL OF TUBERCULOSIS

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The ultimate control and eradication of tuberculosis is primarily dependent upon the location of the unknown case, and the subsequent supervision of that case to prevent further spread of infection. If we had no further knowledge than that now available there is no reason why with the proper application of methods the disease cannot be eradicated. The fundamental problems are the same for any community. The procedures, however, will vary according to the extent of the disease in a given community.

There appears to be some difference of opinion among medical men as to the importance of tuberculosis infection. Some contend that infection confers at least a degree of immunity. As a matter of fact various methods have been utilized to produce artificially such infection with the hopes of gaining an immunity. Others feel that no immunity is conferred, and a careful appraisal of the literature will certainly indicate that if immunity does exist (and I do not subscribe to that theory) it is far from being stable and entirely unpredictable in any case. Thus, for all practical purposes we must consider infection with the tubercle bacillus as an undesirable if not dangerous experience at any time during the life cycle. It follows therefore that our objectives in the control of the disease must be directed toward the detection and isolation of cases in the community.

Tuberculosis then is a communicable disease and as such becomes a problem of the public health. Practically all communities have recognized this responsibility by the provision of hospital or sanatorium beds, as well as a system of clinic services for the early diagnosis of cases and their subsequent supervision, also the contacts to the known cases.

The development of our knowledge of tuberculosis over the years has tended to increase its significance as a specialty, and unfortunately the rank and file of physicians have not kept pace with present day diagnosis, classification and supervision of the case. This division of responsibility is further emphasized by the fact that tuberculosis is most prevalent among the unemployed and lower income groups of society. Almost invariably these members of society are unable to pay for modern diagnosis and care.

It is unfortunate that this division in responsibility has developed because there is no great reason why every private practitioner should not be actively engaged in case finding. Unless his practice is among the low income groups he is denied the abundance of tuberculosis that is to be found, and from which sound judgment can be built. This situation places a definite responsibility on the tuberculosis fraternity. They should make a greater effort to transmit this newer knowledge to all practitioners so that there may be a unified effort directed toward the control of the disease.

There are many cases under private care who can afford an ordinary medical fee but who are unable to pay standard fees for consulation and x-ray by specialists. This problem has been met in a satisfactory manner by the public agency in several communities, where consultation services have been developed without cost to the patient or the physician.

In one city the Department of Health arranged with certain practicing roentgenologists to take stereo films of such cases for a fee of five dollars. The patient paid three dollars to the roentgenologist at the time of the xray and the Department the remaining two. This plan did not function with complete satisfaction because there was no correlation of the x-ray and clinical findings. The x-ray is of vital importance in chest work but does not replace the sound judgment of the clinician. If the clinician is not experienced in these problems the patient frequently will suffer.

In New York City we have been operating for some years past consultation services for the practitioner with patients unable to pay stand-

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ard fees. Our plan includes a complete work-up of the case, x-ray, fluoroscopy, sputum, etc., at the conclusion of which a complete report is given to the referring physician. This report also suggests obvious recommendations for the proper care of the patient as well as a proffer of our facilities to accomplish them. No information relative to the examination is divulged to the patient, our transaction being one of the strictest confidence with the practitioner. The importance of this service is indicated by the work done in 1937. There were 9,380 examinations in which we found 15.5% as active pulmonary tuberculosis, a third of which were minimal lesions. A more extensive report of these clinics has been published by members of our staff, Steinberg and Barnard[1] and Pessar and Edwards.[2]

It is a commonly accepted fact that the individual exposed to tuberculosis is the most likely one to be infected or diseased. This has been a fundamental of our control program since the discovery of the tubercle bacillus by Koch in 1882. This concept I understand is also a basic part of the program in this community. As obvious as this concept may be there has been a tendency among some tuberculosis workers to give a minor place in their program to contact examinations and place greater emphasis on other case finding technics that appear to be greater in magnitude—at least more dramatic in appeal.

As a rule not more than an average of 50 per cent. of contacts are examined, partly because of the difficulty in securing the cooperation of all members of the family, and further because for years the greatest emphasis has been placed on children. All experience points clearly to the adult as the greatest source of tuberculosis morbidity and mortality, and as it is usually the adults who escape examinations we are undoubtedly missing serious source cases that will continue to spread infection.

The significance of contact exposure varies directly with the seriousness of the source case. Families in which a death has occurred from tuberculous meningitis, those in which there resides a positive sputum case and those in which the diagnosed case was discovered at or close to the time of death, will produce the highest percentage of new cases. In these groups particularly it is not enough to examine only the immediate members of the family, for in many instances non-household family contacts may be the source case. The possibility of domestic servants must never be overlooked as they are frequenty the cause of infection in families.

If the source case is an apparently healed lesion, minimal in extent, or in which there is every evidence of a fibrotic process with never a positive sputum, we may expect to find little if any tuberculosis among the contacts.

A positive tuberculin in a child will of course occasionally lead to an open case; but it is rare. This fact was recently brought to our attention in a study by Downes[3] in the Mulberry Health District of New York. During 1936 there were 175 families in this district carried by the Health Center because of the presence of one or more cases of active or arrested pulmonary tuberculosis in the family or a history of a death from tuberculosis. There were grade-school-age children in 52 or 30% of the 175 known tuberculous families. In 64 or 37% of the families there were grade-school-age children who attended the public schools. In the remaining 33%, (59 families) of the 175 families where there were grade-school-age children, they attended parochial schools and were not included in this particular survey. Thus this survey reached only 70% of the families with adult pulmonary tuberculosis and if we had depended upon a positive tuberculin to lead us to these cases we would have missed 37% of the known cases as the grade-school-age child was a negative reactor.

I found[4] in a study in New Haven, Conn., in 1934 that the cost of discovering a case of significant tuberculosis on the basis of a positive tuberculin in a child was 7.5 times greater than where the source case was a known open case of pulmonary tuberculosis, and 13.6 times as costly when the source case was a death from tuberculous meningitis. The actual cost of finding a new case of pulmonary tuberculosis on the basis of the source case was: Tuberculous Meningitis $78.00; Pulmonary Tuberculosis $140.51 and Positive Tuberculin in a child $1,063.50.

Barnard[5] after carefully analyzing a series of families in New York City and Baltimore on the basis of a positive tuberculin in a pre-school child, concluded that it was a costly and ineffective method. More recent studies in one of

our clinics in New York City with similar material substantiate her conclusions.

Thus, while the contact basis of case finding is of the greatest importance, discretion must be used in the significance of the source of exposure. When the incidence of infection in the community is at a level much lower than that in most communities, then we may well consider the tracing of the source case on the basis of a positive reactor to tuberculin. It is believed that here in Peoria where your death rate from pulmonary tuberculosis has reached the exceptionally low rate of 19 per 100,000 such a step is justified.

Surveys of the apparently healthy population is a more recent development in case finding procedure. As in contact examination it is productive to the degree with which the population to be studied is selected. Bloch et al[6] have recently reported that perhaps two million apparently healthy persons have been studied. Unfortunately these surveys have lacked a uniformity in classifications that permit an accurate comparison. In addition to the failure to report a uniform classification, they fail to indicate if the lesion was of clinical significance or an apparently healed scar, and furthermore whether or not the case was previously known. All of these factors must be considered before the effectiveness of the results may be properly evaluated.

A very considerable portion of all this work has been done among grade school children because they form a group easily regimented, and furthermore there has been a prevalent idea that the detection of early manifestation in children would lead to control in later life. Both sides have substance and the latter represents more the idealistic rather than the practical approach. Work among grade school children has failed to accomplish the much larger yield in new cases to be found among the older ages. Meyers[7] has pointed out the so-called latent period in the pathogenesis of tuberculosis. In general if the child survives his fourth year in contact with tuberculosis infection in all probability he will not develop the reinfection type until he reaches puberty or early adult life.

The selection of suitable sectors of our apparently healthy population for mass surveys need not be difficult as we have ample evidence upon which to base sound procedures. If we analyze tuberculosis deaths by age groups and sex we find a sharp rise beginning at 15 years of age; in females it reaches its peak at about 25 to 30 years, whereas among males the peak is reached at about 45 years or later. Whitney[8] has shown that the occupational factor among employed males showed much higher rates among the unskilled as compared to the skilled trades. From the standpoint of economics it is common knowledge that the unemployed as a class, as well as families in the lowest income levels, are decidedly more vulnerable to tuberculosis than those better situated. As a matter of fact many of the cases found in homes of higher social levels may be traced to infection received through domestic employees drawn from the lower levels.

Race is an important factor in the incidence of the disease. There is considerably more tuberculosis among negroes, Mexicans, the yellow races and in some communities among selected whites of foreign extraction.

It is obvious therefore that in contemplating a program in any community each of these factors should be carefully weighed if we are to accomplish the most with the least expenditure of funds. The keynote should be to detect the early as well as the infectious case before there has been time for dissemination of the disease to countless others.

There are still many surveys being made among children in elementary grades and as pointed out previously they are not productive of much disease. In a group of about 9,000 examined in New York City only one case of reinfectious tuberculosis was found, and that, in a girl 14 years of age. A more likely group of the school population would be the high schools, industrial training schools, colleges, etc. These groups represent the age period in which we note a sharp rise in both males and females. As a rule about one case per thousand is found. It is believed by many that the cases discovered are only a part of the benefits derived. The educational value cannot be denied although it is difficult to evaluate in terms of dollars. It is nevertheless a form of applied education in which the student takes an active part and will therefore leave a more permanent impression on his mind than if he read about it in his text books.

The logical procedure in such work is to preselect the material with tuberculin, thereby

eliminating those not infected which results in marked savings in the later x-rays. Many of these programs are developed on a pay basis. There is no reason why those able to pay should not do so. However, if the payment of a fee is contingent to the examination, it will be found that as a rule only those financially able will subscribe, and the greater majority of those from the lower income levels will be missed. It is among that very group that we will find the greatest number with the disease. Thus if tuberculosis is a problem of the public health some provision must be made to accommodate the poorer classes. It is difficult to scale the fee according to the ability to pay without doing injustice to many. Not infrequently families on low income will strain their meager budget, whereas those able to pay will make every effort to secure their examination free or at a low cost. It would seem that here the official agency should provide the needed funds so that all children would be served. Such a survey should be so developed that at its conclusion the relative importance of this group as a whole or in part might be obtained. It must be remembered that the school population represents only a comparatively small part of the community program, and a substantial amount of the survey funds should be directed to adults.

In New York City[9] we have developed mass surveys of the apparently healthy population after careful consideration to the foregoing criteria of possible incidence of disease. We have found the method both productive and at a cost within reason. Our program has been possible because of assistance through a W.P.A. grant, and the use of the Rapid Paper x-ray method. This latter method has proved most satisfactory, as has also the use of cut sheets of paper in much of our routine work. The paper x-rays now available have reached a point of perfection that makes them reasonably comparable with celluloid and at marked monetary savings. As a matter of fact we have been able to detect the early infiltrates on paper with as much ease as on celluloid. The problem of evaluating their seriousness has been equally difficult on either medium. We have no hesitancy whatever in stating that the paper x-ray in our work has been entirely satisfactory.

Thus far we have surveyed well over 100,000 persons from various racial, economic and age groups and this experience leads to the following conclusions:

1. Over two per cent including adolescents and adults have been found with reinfection types of the disease.
2. Approximately one-half of these lesions will be of clinical importance and in need of definite supervision.
3. Approximately three-fourths will have minimal pulmonary lesions, usually in an asymptomatic stage.
4. Approximately 90 per cent of these lesions were entirely new and had not been previously diagnosed or reported.
5. The majority of all lesions were found in those 20 years or over.
6. The highest incidence of disease is to be found among the unemployed and lowest economic levels, reaching in some groups seven per cent. and in one the startling figure of 11 per cent.
7. These surveys reveal many other types of pulmonary pathology, and in adults about five per cent. have shown abnormal cardiac shadows.

From this experience I believe it is logical to conclude that the problem in other communities will, in all likelihood, follow a similar pattern.

There are many inherent dangers in mass survey work. Of first importance is the diagnosis made on the x-ray. There has without doubt been a great amount of over diagnosis of the x-ray particularly with shadows about the hilus and as frequently with parenchymal lesions. It must be realized that all increases in intrathoracic densities are not on a tuberculous basis, even though there may be a positive reaction to tuberculin. In our experience we have found it important to weigh carefully each of these lesions. Certain ones we find will clear in a comparatively short period, while others may remain stationary for a time only to show progression later on. It has required both numbers of lesions as well as hospital supervision of many to classify their significance in our minds and yet I am free to admit that many are baffling and we have no answer at all. We have had an unusual opportunity to study these early infiltrates through our routine x-raying of employees appointed to the Department of Health and the Fire Department where it is possible to re-x-ray them at

periodic intervals. The fact that these cases are on a payroll assures complete cooperation. The evidence points clearly to the absolute necessity of having a staff well trained in the detection of early lesions as well as experience in their ultimate supervision. Our experience indicates that without this approach the usual observer frequently minimizes early changes to the ultimate detriment of the patient. It is axiomatic that sound conclusions can be based only on individual appraisal, and not on generalization of the many. This is not because this knowledge cannot be absorbed by all interested clinicians and radiologists, but rather because it is still somewhat of a new venture and experience alone can give the substance from which accuracy is developed. Here in Peoria where you have accomplished so much in your sanatorium with the early case, the leadership is available and should be the hub around which all such work is developed. For if not properly handled at the outset then cases so frequently return later with advaneed disease when they are a community problem.

Another problem that challenges our attention is: what shall we do with these cases once they are discovered? In the school survey work there has developed the idea that some supervision must be given the child with a positive tuberculin, or the residuum of a primary lesion. The Preventorium and Open Air Class has been the usual answer. In this field we have again accumulated a great deal of experience that can no longer be ignored. Neither institution really prevents tuberculosis in the long run, primarily because at that age seldom anything happens, and furthermore, the length of time the child may spend in either is so short that no lasting benefit is gained. It is true that the child in both will show a gain in weight; but unless we make some provision in the home to maintain that gain, as well as remove the source of infection, the ultimate value is at best doubtful. In recent years the Preventorium has definitely lost caste and several have been closed or better still have been converted to beds for the tuberculous. This change in emphasis here in Peoria has removed your waiting list so that all new cases may be promptly admitted when diagnosed. The open window class room still holds sway in many communities, but they too are on the way out. In addition to the foregoing objections to the open air class room they are further complicated by the fact that sooner or later they become the dumping ground for a wide variety of problem children many of whom are not even remotely related to a tuberculous infection.

The reinfection type of lesion manifested as an early parenchymal infiltrate demands the best possible judgment in supervision. All too frequently these lesions are not given the consideration they deserve. The patient is invariably without symptoms—certainly the cardinal symptoms so long associated with the disease. The patient and the physician as well may for this reason be inclined to ignore them and wait for some evidence of a more urgent nature before action is taken. In our experience we have seen disastrous results time and again, and when the case finally comes under observation the disease has spread to a more advanced stage with all the consequences involved.

These early lesions are manifested by small areas usually located in the upper half of the lung. Some are fairly discrete suggesting both an exudative and a productive process. Some are plaque-like shadows usually located subclavicularly, and we have seen them shell out within a few months. Others are located in the first rib circle and appear to be fairly stable, but we have seen these break down and spread. There is another group manifested only by a clouding well out toward the periphery that is frequently mistaken for soft tissues. These also have been seen to spread usually without associated symptoms, and almost invariably in all these cases there is no history of contact or exposure.

A number of recent reports from those interested in Hospital Nurses Training schools with this problem, have emphasized the importance of strict bed rest. Their results have been most encouraging in bringing these lesions to an arrest. Our experience has been parallel. It appears that adequate results in the majority can be secured without surgical interference, and it is not believed that pneumothorax should be a routine, at least not until bed rest has been given a fair trial.

Fellows[10] of the Metropolitan Life Insurance Company in New York City has developed one of the most complete tuberculosis programs in industry. In his plan all applicants for Home Office employment who formerly were routinely

examined physically, are now also fluoroscoped, and all Home Office employees are fluoroscoped annually and x-rayed when indicated. The Home Office employees with suspicious or definite tuberculous lesions are hospitalized at Mt. McGregor, the Company's sanatorium. On discharge from the sanatorium, they are placed back on the job where careful re-examinations are made as indicated.

Since 1930 they have examined approximately 14,000 Home Office employees annually, among whom 200 cases of active pulmonary tuberculosis were found; 120 or 60% were minimal, and 80 or 40% were advanced; and since 1933, 70% were detected in the minimal stage. All have been hospitalized at Mt. McGregor and about 25% have a positive sputum.

He states that "By far the larger percentage of these individuals have no physical signs upon examination, and only about half of them present suggestive or typical symptoms. The results from the standpoint of treatment are very encouraging. We have found that those who commence their cure before symptoms, signs or history indicate an active lesion, show a definitely lower percentage of recurrence."

CONCLUSIONS

Case finding is an essential part of the tuberculosis control program and it is believed that with a judicious use of our present day knowledge the disease may be completely eradicated.

The most productive source of new cases is in the examination of those exposed to known cases. Here discretion must be shown in the emphasis we place on the source case. By and large the more malignant and fulminating the primary case the greater the incidence in infection and disease among the contacts.

The apparently healthy population affords a desirable medium of case finding providing a selected group is taken. Generally speaking they will be 20 years or over, of the lowest income groups; the unemployed or the unskilled trades, the colored races invariably showing a higher percentage of disease than the whites.

The early lesion detected in mass survey work will command the best effort in diagnosis and must be carefully supervised despite the fact that these cases are usually symptomless. Experience indicates that many of these early infiltrates benefit by bed rest in the hospital, and also that a period of post sanatorium supervision is advisable.

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SULFANILAMIDE IN THE TREATMENT OF STRICTURES OF THE RECTUM CAUSED BY LYMPHOGRANULOMA VENEREUM

Preliminary Report

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Current methods of treatment of the anorectal manifestations of lymphogranuloma venereum have been most disappointing. The reported good effects of Frei antigen therapy have not been confirmed. Tartar emetic and fuadin have failed to prove efficacious as therapeutic agents. Deep x-ray therapy over the sacrum has proved ineffective. Dilatation has not given satisfactory results. Because the inflammatory process usually involves the anus and a considerable portion of the rectum, operations, such as the so-called internal proctotomy, have failed to give more than temporary relief. Even such radical measures as temporary or permanent colostomy have occasionally failed to retard the extension of the inflammatory process into the adjacent tissues of the perineum. In some patients, follow-

Sulfanilamide was furnished for this study through the courtesy of the Winthrop Chemical Company.

ing colostomy, the inflammatory process may ascend to involve and constrict the stoma of the colostomy, necessitating the establishment of an artficial anus in the transverse colon. The unsatisfactory results of these various methods of treatment seem explainable by the failure to attack directly the inflammatory process itself.

Inasmuch as the etiologic factor of lymphogranuloma venereum is as yet unknown, all methods of treatment are empirical. During the past year, numerous reports have appeared in the American literature concerning the favorable action of para-aminobenzenesulfonamide (sulfanilamide) against beta-hemolytic streptococci, meningococci, pneumococci, and gonococci. In spite of the lack of experimental evidence of the value of sulfalnilamide in the treatment of lymphogranuloma venereum, there appeared to be no contraindication to its administration empirically, to patients with this disease.

Observations have been made of the oral administration of sulfanilamide in nine patients with rectal stricture due to lymphogranuloma venereum. In each patient, the diagnosis of inflammatory rectal stricture was made by digital examination, visualization with the aid of the proctoscope, and in some instances by x-ray. All patients presented a strongly positive reaction to the Frei test and had been under observation for periods varying from one to three years prior to the administration of sulfanilamide. Most of the patients had previous treatment in other institutions before coming under my observation.

With one exception, all patients received 30 grains of sulfanilamide daily for fifteen days in three divided doses a day. One patient, because of marked dizziness and lassitude, was unable to tolerate sulfanilamide in excess of 20 grains daily, but was given the same total amount over a period of twenty-three days. No other treatment, local or general, was administered. The patients were warned against taking any other medicine, especially magnesium sulphate and other cathartics. Following this treatment a rest of seven to ten days was given, after which sulfanilamide was again resumed. It will be noted that some patients responded more rapidly than others, and the number of periods of treatment varied with the individual response.

The following case histories are given as illutrations of the therapeutic results.

Case 1. C. C., a negro woman, aged 36, began to suffer from rectal trouble in 1928. She came under my observation in 1935, suffering from a constant profuse rectal discharge, tenesmus, bleeding on defecation, and pruritus ani. Examination revealed the anus deformed by multiple, firm, fibrous tags, bathed in a purulent discharge, with extension of the inflammatory process into the perianal tissues and beginning elephantiasic edema of the distal parts of the labia majora. The obstructive contracture immediately above the anus made proctoscopic investigation impossible. X-ray examination with the barium enema disclosed the process to be confined to the anorectal region. The Frei test was positive, and injections of Frei antigen intracutaneously failed to affect the process. Dilatation, tartar emetic, and deep x-ray therapy were also tried without success. In August, 1937, sulfanilamide was prescribed. The patient received a total of 54 Gm. of sulfanilamide during two fifteen-day periods of treatment. Response was rapid with prompt relief from tenesmus, and gradual disappearance of the discharge, bleeding, and pruritus. When last seen, two months since treatment, the patient had gained 12 pounds in weight and had noted no recurrence in symptoms. Though the anal tags persisted, their inner inflamed surfaces were healed. The anus admitted the little finger without discomfort, revealing a smooth, fibrous constriction of the anorectal region. The areas of perianal involvement had healed.

Case 2. G. L., a negro woman, aged 23, began to have rectal trouble in April, 1935. When she came under my observation in May, 1935, she was found to have an anterior mid-line anal fissure, associated with proctitis and bilateral inguinal adenitis. The Frei test was strongly positive. The patient was given Frei antigen intracutaneously, which seemed to influence favorably the inguinal adenitis, but failed to influence the rectal condition. As the inflammatory process extended, the anterior wall of the anorectal region was thrown into irregular, elevated folds associated with marked proctitis and a continuous purulent discharge. Smears did not reveal gramnegative intracellular diplococci. In 1936, the patient developed an anorectal fistula. Fistulectomy and fissure excision were done. These wounds, bathed in a continuous mucopurulent discharge, healed very slowly. Meanwhile the inflammatory process in the rectum was found to have ascended to involve the last 6 cms. of the rectum with constriction most marked at about 4.5 cms. above the anus. Tartar emetic was administered without success. The patient was gradually becoming debilitated by intermittent attacks of fever, continuous rectal discharge, bleeding, and tenesmus with frequent stools of mucus and fecal material. Serology was negative, and the blood count revealed a moderately severe hypochromic anemia. In August, 1937, sulfanilamide therapy was begun. Response to therapy was gradual. Tenesmus was the first symptom to respond favorably. Later, the bleeding and discharge decreased, and finally the mucus stools gradually diminished and disappeared. There was no recurrence of fever. The patient's appetite and general condition improved, and at the conclusion of treatment she had gained 15 pounds. Proctoscopic exam-

ination revealed that the occluding ulcerating granulations of the involved bowel had been replaced by mucous membrane from the strictured area downward to the anus. A total of 108 Gm. of sulfanilamide was given orally in this case during four periods of treatment. There has been no recurrence of symptoms after six weeks without treatment.

Observation of patients with rectal stricture due to lymphogranuloma venereum reveals that in the majority of instances the destructive and disabling lesions of this disease are accompanied by evidence of infection. The obstructive contracture of the rectum gives rise to local discomfort occasioned by the discharge of a mucopurulent and bloody material associated with varying degrees of tenesmus with urgent and frequent desire for defecation, during which incomplete evacuations of mucus and fecal material occur. Manifestations of constitutional intoxication vary with the individual patient and no not appear to be directly related to the extent of the local, destructive, inflammatory process. However, most patients have symptoms of chronic sepsis with debility, slight to moderate recurring elevations of temperature, impaired nutrition, loss of weight, and hypchromic anemia. These symptoms persist as long as the inflammatory process in and about the rectum is active.

The effect of sulfanilamide on the inflammatory process in these patients was evaluated by the response of rectal symptoms, and of the patient's general condition, to the administration of the drug. In five patients the tenesmus, mucous stools, rectal discharge and bleeding completely disappeared under therapy. Two patients with rather extensive involvement of the rectum are still under treatment because of the presence of occasional mucus stools, although the other rectal symptoms have disappeared. The most striking effect of treatment was the rapid improvement in appetite accompanied by an increase in weight and strength. As indicated in the accompanying chart, all patients showed a distinct gain in weight. The response of the rectal symptoms to the administration of sulfanilamide appears to be related more or less directly to the extent of the involvement and not to the duration of the disease.

Follow-up protoscopic examinations were made in seven patients who previously presented irregular, ulcerating overgrowths of granulation tissue obstructing the bowel, with almost complete denudation of the mucosa. It was observed that, although the stricture persisted, the granulations had been replaced for the most part by mucous membrane.

Colostomy operations had previously been performed in other institutions on two patients prior to my observation. One patient, K. E., did not suffer from rectal symptoms, but complained of a constant, profuse, purulent discharge from the sinus of the left inguinal colostomy, associated with bleeding and frequent evacuations from the transverse colostomy. These symptoms rapidly improved following the administration of sulfanilamide, and the patient gained ten pounds in weight. The other patient, C. H., was debilitated and complained only of a profuse, rectovaginal, sanguino-purulent discharge, which greatly diminished under treatment and lost its bloody character. This patient rapidly gained in strength and when last seen she had gained twenty-two pounds.

The administration of sulfanilamide in small doses of 1.2 to 1.8 gm. daily, over a prolonged period in repeated courses, appears to be a satisfactory method in patients with rectal stricture due to lymphogranuloma venereum. Rapid response of symptoms and general impovement was noted in five patients, each of whom received a total of 54 gm. of sulfanilamide during two fifteen-day periods of treatment. In two patients a total of 108 gm. of sulfanilamide was administered, during four periods of treatment, before the rectal symptoms completely disappeared. Two patients remaining under treatment because of the persistence of occasional mucus stools have received 81 gm. and 108 gm. of sulfanilamide without having any cumulative toxic effects.

Minor toxic manifestations to the administration of sulfanilamide were noted in five instances, such as malaise, lassitude, headache, and dizziness. One patient complained of insomnia. The patients seemed to develop a tolerance for the drug with disappearance of the toxic symptoms as its administration was continued. Two patients complained of abdominal cramps while taking sulfanilamide but did not discontinue treatment. While all patients presented varying degrees of hypochromic anemia at the institution of treatment, there was no instance of the development of severe hemolytic anemia. It was observed, however, that the low hemoglobin level noted in these cases did not improve under treatment, although no reduction in hemoglobin

was noted. Neither drug eruptions nor elevations of temperature were noted in this series.

The encouraging results noted in patients with rectal stricture prompted the further use of this method of treatment in patients presenting the inguinal and vulval types of involvement. To date, only three male patients with inguinal adenitis due to lymphogranuloma venereum have been given sulfanilamide. It was found to favorably influence this type of involvement, but failed to cause the adenitis to completely subside. One female patient with chronic ulcers of the vulva, hypertrophic vulvitis, and chronic urethritis due to lymphogranuloma venereum has shown definite improvement on sulfanilamide therapy with prompt response of urinary symptoms and gradual healing of the ulcers. As yet there has been no change in the elephantiasic edema of the vulva.

SUMMARY OF NINE CASES OF RECTAL STRICTURE TREATED WITH SULFANILAMIDE

Frei Test Positive in All Patients

Patient Age	Sex Race	Diagnosis	Duration of Disease Years	Grams of Sulfanilamide Administered	Response of Rectal Symptoms: Tenesmus	Mucus Stools	Discharge	Bleeding	Remarks
K.E. 30	Female White	Rectal stricture; inguinal and transverse colostomies.	4	54	O	O	O	O	Pus and blood disappeared from colostomy wounds. Gained 10 pounds.
C.C. 36	Female Colored	Anorectal stricture; fibrosed anal tags.	9	54	C	C	C	C	Response rapid. No recurrence after 2 months. Gained 12 pounds.
G.L. 23	Female Colored	Rectal stricture.	2	108	C	C	C	C	Gradual response. No recurrence after 1 month. Gained 15 pounds.
M.A. 23	Female Colored	Rectal stricture; anorectal fistula.	2	54	C	C	C	C	Rapid response. No recurrence after 2 months. Fistulectomy healed. Gained 8 pounds.
M.H. 48	Female Colored	Rectal stricture; rectovaginal fistula.	14	54	C	C	C	C	Response rapid but rectovaginal fistula causes distress. Gained 6 pounds.
L.H. 30	Female Colored	Stenosis of rectum (12 cm. in length).	4	81	C	P	C	C	Under treatment. Response gradual. Gained 9 pounds.
C.H. 29	Female Colored	Rectal stricture; inguinal colostomy; rectovaginal fistula.	7	54	O	O	P	C	Rapid response. Under treatment. Rectovaginal fistula same. Gained 22 pounds.
G.G. 33	Male White	Rectal stricture; anorectal fistula.	4	108	C	C	C	C	Response gradual. Gained 10 pounds. Able to resume work.
B.B. 30	Female Colored	Rectal stricture.	5	108	C	P	C	C	Response gradual. Under treatment. Gained 10 pounds.

Key to response of rectal symptoms:
C = complete relief
P = partial relief
O = symptoms not present on institution of treatment.

SUMMARY

The results of the administration of sulfanilamide in nine cases of rectal stricture due to lymphogranuloma venereum are presented.

The general improvement of the patients and the response to sulfanilamide of the inflammatory process in and about the rectum has been encouraging, but further investigation is desirable.

Small doses of sulfanilamide administered over a prolonged period in repeated courses has proved satisfactory in this series of patients. Only minor toxic manifestations were noted, but the potential danger of severe reactions to this drug has been emphasized by others.

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THE CHANGING INDICATIONS FOR PROSTATIC SURGERY

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The advent of the transurethral approach to the removal of prostatic obstruction was attended by enthusiasm, by skepticism and by confusion. We are now emerging from that transition and are in a position to realign our views on prostatic problems in the light of experience.

The indications for prostatic surgery are being broadened, on the one hand, to include more of the patients who, due to their debilitated general health, were formerly denied surgical relief

and, on the other hand, to include more of the younger patients whose obstructions are as yet incomplete.

The patient suffering from prostatic hypertrophy, since it is an affliction that comes with advancing years, is usually well past his prime of life as a surgical risk. That suprapubic prostatectomy was alleged to carry the highest mortality of any operation for the alleviation of a non-malignant condition was due, not so much to the rigors of the procedure, as to the age and infirmity of the patients who presented themselves for relief from urinary obstruction. In addition, surgical intervention had to be refused to a group of the more debilitated patients on account of the improbability that they could survive the operation.

There has long been need for a method of removing prostatic obstruction that could be extended to patients who were bad surgical risks. The value of the transurethral resection in this direction has been rather generally acknowledged. One is surprised at the number of people in their eighties who apply for relief from their urinary difficulties, and it has been pleasing to observe how well they tolerate their resections.

Another gratifying aspect of the operation has been the relief that now can be extended to patients who, in addition to suffering from a urinary obstruction, suffer from a cardiac disorder. A recent case has brought this forcibly to the writer's attention.

The patient, a man sixty-six years of age, was referred with complete prostatic obstruction in addition to a failing cardiac function with pulmonary edema and cyanosis. An electrocardiogram showed marked damage. The roentgenogram of the chest showed an extensive enlargement of the heart.

He was transferred to the cardiac service, the only immediate urological treatment being an indwelling catheter and urinary antiseptics. Three weeks later he had improved sufficiently to have a suprapubic catheter inserted through a trocar under local anesthesia. He continued his cardiac treatment at home, and returned at intervals; but as fluoroscopic examination of his chest still showed pulmonary edema, surgery was felt to be out of the question. On October 26 he returned, stating that his suprapubic tube had been dislodged some days previously and that he was leaking urine through the sinus, which had now become too small for the reinsertion of a catheter. It was felt that he could not tolerate a suprapubic cystotomy better than he could a transurethral resection; and while the former would be only palliative, the resection, if successful, would, so far as his urinary disability was concerned, be curative. Fluoroscopic examinations showed his lungs to be clear of fluid for the first time since his original admission. However, the slightest exertion caused dyspnea, and moderate exertion caused cyanosis. The cardiologist regarded him as a very poor surgical risk. The patient himself forced the issue by refusing to continue with a catheter, either suprapubically or urethrally, if anything better could be offered him. The risk of even a transurethral resection, to one in his condition, was explained to him; but he demanded that it be carried out if there was any possibility that he might survive. He was taken to the hospital and the next morning was given a small spinal anesthetic in the lowest accessible lumbar segment. Examination with the retrograde cystoscope showed large lateral prostatic lobes projecting into the bladder. A Thompson resectoscope was used, and the removal of thirty-two grams of tissue in a forty-five minute operation cleared away the main obstruction. It was felt to be unwise to prolong the operation in order to trim away all the remnants of tissue; and so the bleeding was stopped with the electrode, a catheter was inserted, and the patient was returned to his bed. He spent a good operative day and was permitted to be out of bed on the second postoperative day. On the third postoperative day the catheter was removed and he voided satisfactorily. A check of his residual urine that day showed ninety cubic centimeters. The fourth day he had fifty cubic centimeters of residual urine. On the sixth day he was permitted to go home. Two weeks later he returned for his final check up. He was voiding to his complete satisfaction and had no residual urine. He was, however, still dyspneic after such mild exertion as walking on the level.

This case is presented in its details in order to emphasize how far transurethral prostatectomy may be extended in the direction of offering relief to patients with cardiac insufficiency. Before the days of transurethral resection, we would have had nothing better to offer this patient than that unhappy life known as a "catheter life."

There are, of course, limits beyond which transurethral surgery may not be extended and should not be forced. An attempt to operate on every case of prostatic obstruction, regardless of the general health, will lead to some unhappy consequences. Every aged patient should have an electrocardiographic test of heart reserve, as well as the usual urine and kidney function tests, in addition to the thorough physical examination. It is also well to keep a borderline case under observation before any decision regarding surgery is made. There should be complete cooperation with the medical department in the preoperative treatment, and nothing that will increase the patient's resistance should be disregarded. A patient's condition having been in-

vestigated and, if possible, improved, the decision regarding his fitness for surgery will depend on the operator's experience. Experience has shown that we can successfully relieve prostatic obstructions in patients who could be expected to survive almost no other major surgical procedure. Certainly the proper employment of the transurethral resection is extending the indications for surgical relief of prostatic obstruction to include a large portion of the feeble or debilitated patients to whom it was formerly necessary to refuse surgical relief.

The indications for modern prostatic surgery are also being expanded in the direction of including younger patients who are suffering from incomplete obstructions.

Formerly we were not equipped to deal with prostatic obstruction in its earlier stages or in its incomplete manifestations. Suprapubic enucleation of the gland was too extensive an operation to be applicable to cases of partial obstruction and, for lack of a better method, these patients were allowed to continue until the operation was no longer avoidable. As the technique of prostatic surgery has changed, so have the indications for surgical relief: and one no longer serves the best interests of the patients by permitting them to harbor a partial obstruction to the urinary outflow, for such obstruction, though incomplete, cannot be long continued without injurious consequences to the urinary tract proximal thereto.

The advent of an obstruction to the passage of urine is met by an increased activity on the part of the bladder musculature. Symptomatically, the obstruction is evidenced by a slowness in initiating. urination, by an increased straining required to void, and by a decrease in the size and force of the urinary stream. As the obstruction in the prostatic urethra increases, the wall of the bladder may do one of two things: it may hypertrophy and, for a time, keep pace with the increasing obstruction; or it may relax and become atonic.

If the bladder is unable to empty itself completely, a pool of residual urine remains after each voiding. As the obstruction slowly increases, the amount of residual urine also increases. Ultimately, the amount of residual urine may far exceed the normal content of the bladder. Some time ago a patient was referred with a history of long-standing, progressive urinary difficulty. Although he continued to void in small amounts, he was carrying about three liters of residual urine. A chronic distention of such proportion leads to an atonicity from which the bladder recovers slowly. In his case, the bladder musculature did not regain sufficient tonicity to be able to empty itself completely until the sixth week after the obstruction had been removed. By relieving the obstruction in his prostatic urethra in its earlier stages, much damage to the bladder might have been avoided.

Infection is not necessarily a sequel of prostatic obstruction, but a pool of residual urine is a fertile soil for infection; and unless the obstruction is relieved before it becomes complete, catheterization must ultimately be resorted to, and catheterization, especially if repeated, leads quite regularly to a urinary infection in such cases. If the obstruction is relieved in its incomplete stages, infection can usually, although not always, be avoided.

As has been stated, not all bladders become atonic as the result of obstruction. Some bladders hypertrophy as the obstruction increases and are able to empty themselves completely for a time by increasing the expulsive force. The hypertrophy of the musculature of the bladder is able to keep pace with the increasing obstruction only temporarily; and when the time comes that the bladder can no longer rid itself of all the urine, the hypertrophy of the bladder proves to be disadvantageous; for the wall is unable to relax sufficiently to absorb the back pressure of the urine, and one of two unfavorable consequences results; either the wall of the bladder gives way at its weakest point and causes a diverticulum of the bladder, or, if the bladder withstands the increased urinary pressure, the pressure is transmitted to the kidneys, where it can do the most harm by causing hydronephrosis, failing renal function and, if unrelieved, ultimately death.

The best preventive for damage to the remainder of the urinary tract as the result of a partial obstruction in the prostatic urethra is the removal of the obstruction. An operation aimed at the relief of an early obstruction has to meet three requirements: it must not be hazardous, it must not interfere with the patient's general health, and it must not involve a long convalescence. Previously we had no operation that met these requirements and we had no way

of dealing satisfactorily with partial prostatic obstructions. In the transurethral resection, we have a method that entails little risk, that permits patients to leave the hospital, on the average in less than a week, and that does not keep them from their work for any great length of time.

The future interests of the patients will be best served by removing the obstructing prostatic tissue before unfavorable complications have had an opportunity to develop.

One is frequently asked as to what types of prostatic hypertrophy should at present be reserved for a suprapubic rather than a transurethral prostatectomy. When transurethral surgery was in its infancy, its field of application was largely limited to the small medial lobe obstructions. Later it was expanded to include enlargements of the lateral lobes. As the scope of the operation has expanded, there have been two types of prostatic enlargements that have remained difficult for transurethral resection: one, the prostate that requires the removal of large amounts of tissue due to its extreme size; the other, the prostate that, due to its structure, requires almost a sub-total prostatectomy transurethrally in order to permit the unobstructed passage of urine.

Structurally, benign enlargements of the prostate gland differ considerably. Under the microscope one sees adenomatous and fibrous tissue in varying proportions. Surgically, the important consideration is whether the remainder of the gland is structurally firm or is soft and elastic. Often one encounters elastic adenomatous tissue in the lateral lobes, more of which presses into the channel as fast as it is removed. In such a case, it is necessary to remove a large amount of tissue and to do almost a sub-total prostatectomy transurethrally in order to provide a wide open passage for urine. Again, one encounters enlarged glands composed of tissue that is soft and structurally inadequate to maintain a channel opened through it. As tissue is removed, more is seen to collapse into the opening from higher in the lateral lobes. Here again it is necessary to remove large amounts of tissue in order to obtain a good result. It is always important in such a case to remove plenty of tissue from the anterior halves of the lateral lobes and to be on the lookout for a hypertrophied anterior lobe. I recently operated upon a patient with a complete obstruction in whom the excess tissue was almost entirely in the upper half of the left lateral lobe. Most of the operation was performed with the instrument inverted; and twenty-two grams of tissue, which is almost the equivalent of a normal gland, was removed from the anterior portion of the prostate.

The sheer size of the gland may also make it borderline for a transurethral resection. I believe, however, that the proper way to treat a prostatic obstruction that requires the removal of a large amount of tissue is not to do a suprapubic enucleation but to do a transurethral resection in two stages.

Some months ago I operated on a man who had such huge projections of the lateral prostatic lobes into the bladder that it was only with great difficulty that the instrument could be inserted deep enough to engage them. At the first stage of the operation, the intravesical enlargements were removed transurethrally, the bleeding stopped, a catheter inserted, and the patient returned to his room. He was able to be out of bed the next day. Five days later he was returned to the operating room for the second stage, at which time the intraurethral enlargements of his prostate gland were removed. He was out of bed on the first postoperative day and the catheter was removed on the second. He voided easily and had only twenty-five cubic centimeters of residual urine. The third day he had twenty cubic centimeters of residual urine, and on the fourth day he emptied his bladder completely. He left the hospital on the fifth day and has since voided to his complete satisfaction.

Transurethral prostatic resection lends itself well to division into stages. Unlike the possibility in many other surgical procedures, one may terminate the operation at will. At any time, the surgeon may insert a catheter for drainage, and return the patient to his room. Thus prolonged anesthesia and surgical shock can be avoided. By judicious employment of the two-stage prostatectomy, one can extend to patients harboring huge prostatic enlargements the relief obtained by transurethral prostatic resection and, at the same time, preserve to them all the benefits of the operation in the form of minimal risk, brief hospitalization, and early return to accustomed employment.

The purpose of this presentation is to emphasize the changing indications for surgical relief

of prostatic obstruction as the transurethral approach is perfected and expanded. Relief can now be offered to aged and infirm patients from whom it previously had to be withheld. On the other hand, we are now well equipped to remove partial and incomplete obstructions before they give rise to complications in the remainder of the urinary tract. By dividing the operation into two easy stages, a few days apart, we can remove large amounts of prostatic tissue when necessary and at the same time preserve to the patient all the benefits of the procedure in the way of minimal risk and brief convalescence.

1200 Main Street.

DERMOID CYST SIMULATING MENINGOCELE

A Case Report

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The haphazard diagnosis of tumors of the scalp may lead the surgeon into a series of operative errors with the patient being on the losing end, but due to nature's generosity, the surgeon is saved the physical hurt but not the mental anguish of conscience. The repeated warning in the literature that exact diagnosis is not overestimated is illustrated by the following case. We are of the opinion that emphasis has been insufficient and that errors in diagnosis are still very common. Our case shows the need of differential diagnosis between meningocele and dermoid cyst of the scalp. The former involves much thought before operative procedure is outlined, and often not indicated, while the latter is more amenable to permanent cure.

Meningoceles and dermoid cysts are both congenital and noticed in the first decade of life. Both have deep seated attachments, but only meningoceles have continuity with the supracerebral fluid. The former are true herniations, but not the latter. Both may be confused and mistaken for the following: each other, angioma, lipomata, sebaceous cyst (wen, atheroma, sebocystomatosis, steatoma), fibromata, fibroma molluscum, Dercum's Disease, osteatomata, cephalhematoma, cephalocele, cephalematocele (Stromeyer's), cephalematoma (caput succedaneum), cephalhydrocele, syphilitic nodes, gummata, implantation cysts, and keratomas.

A dermoid cyst of the scalp is most often a single tumor; may be attached to any or all tissues from the cerebral dura to the deep pericranium (cranial periosteum); dissection is difficult; bone defect may be complete or incomplete; only sequestration dermoids occur on the scalp; the attachment is by a pedicle or a broad base; and is on or near an embryological line of closure.

Miss M. C., age 20. When about three or four years old her mother had her examined by a regular doctor who told the mother that her daughter had a "bump," and that it would go away. The patient became aware of the lump at the age of ten or eleven because others recalled it to her attention. Its progressive increase in size has been extremely slow. Massage had been ordered by a regular doctor to reduce the swelling but although the patient felt that it became smaller, it never disappeared. Resting head on a hard table was also tried without success. The patient was born in Ravenswood Hospital, Chicago, Illinois. The birth history is negative. The tumor was about 3 mm. in diameter at the time her mother first had her examined, In April, 1938, it measured 6x4.5x1.5 cm. It has never been painful.

Diagnosis: Clinical examination shows a swelling of the left orbito-fronto-temporal region (Figures 1 and 2). The skin is normal and freely movable over the slightly movable tumor beneath. It does not fluctuate. Slight compression is possible with digital pressure. Motion in a circular direction is slight. The mass can be seen to reach from the lateral ocular angle to just beyond the hair-line of the left temporal region. Notice furrows between junctions of normal lid and forehead skin to that stretched by the tumor.



Fig. 1. (left) Tumor in sphenofrontal region, size of an orange, anterior view.
Fig. 2. (right) Tumor in sphenofrontal region, size of an orange, lateral view.

The patient consults surgical aid because of marred beauty and progressive loss of vision due to encroachment into the orbit by the tumor. She raises the upper lid with difficulty, and temporal vision is obstructed. Neurological consultant diagnosed mass a meningocele after seeing x-ray film and roentgenological report (Figure 3), and advised a large scalp flap and osteoplasty—a formidable operation in a well person. Transillumination was negative. Needle puncture was not given a thought. The mass gave no impulse on coughing nor any increase in size.

Report on Figure 3 from roentgenologist: "Stereoscopic films of the skull and postero-anterior projection of the skull show an oval defect about 3/8 inches in diameter in the temporal region just above the orbit. A fairly good sized meningocele comes through this cranial defect . . . These findings suggest that there may be some cerebral content present also."

Report on Figure 4 by another roentgenologist: "Oblique views of the fronto-lateral region of the left orbit and temporal regions show no evidence of abnormality in the skull tables." This observer interprets the above film (Figure 3) as not being an opening in the skull. He believed that on film of Figure 4 a possible deep fossa existed, and that the bone is rather thin in a region one inch in diameter just lateral and posterior and slightly above the left orbit.



Fig. 3. (above) Stereoscopic film of the posterior anterior projection of the skull shows an oval defect 25x18x3 mm. in the left temporal region just above the orbit.

Fig. 4. (below) Oblique view of the skull shows that a rather deep fossa exists, and that the bone is rather thin in a region one inch in diameter, just lateral and posterior and slightly above the orbit.

After much mental anguish, the turmoil of thought was as follows: the base of the tumor could not be felt, so that if a bony ridge of the defect could be felt around the tumor, the diagnosis of a dermoid would be certain; the roentgenologists disagreed. Was the base of the tumor not felt because of its slight mobility? Was it a meningocele which had its neck closed at puberty and now lost its connection with the cranial cavity? What type of surgical attack?

Operation: With the greatest reverence for the handiwork of THE GREATEST SURGEON, we decided to perform a conservative incision and to enlarge it if thought necessary later. An incision was made in the line of the left eyebrow. The mass was adherent to the surrounding tissues and was freed with great difficulty especially at the base where there was definite crater-like depression measuring 25x18x4 mm. just below the inferior temporal line above the sphenofrontal suture. The tumor was attached tenaciously to bone below the periosteum, and included the thin area of the x-ray films.

Examination of tumor mass: sebaceous material was present but the odor was not as offensive as the stench of wens. The internal surface is partly smooth, and partly uneven, and varies in color from a pale grey to brown.

Microscopy: The lining of a portion of the cyst varies from a single-layered flat epithelium with hexagonal shaped cells with small nuclei to a many-layered squamous epithelium. Most of the wall is fibrous and infiltrated with scattered lymphocytes. Pathological Diagnosis: Embryonal cyst of head.

Conclusion: 1. We believe that the above cyst is a sequestration congenital dermoid of the left temporal region, probably originating in or near the left sphenofrontal suture line. 2. Emphasis is placed on the necessity to avail oneself of the various methods in making as correct a diagnosis as possible. 3. Surgery should be performed with cosmesis in mind.

We wish to express our appreciation to Dr. Julius Brams and to Dr. Roy Kegerreis for their assistance in the diagnosis of this case.

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THE NUPTIAL ERROR

The story is told of the demure bride, her face a mark of winsome innocence, who walked slowly down the church aisle clinging to the arm of her father. As she reached the platform before the altar, her dainty foot brushed a potted flower, upsetting it. She looked at the spilled dirt gravely, then raised her large, childlike eyes to the sombre countenance of the aged minister. "That's a hell of a place to put a lily," she said.

STREPTOCOCCUS MENINGITIS

Report of a Recovery Following Use of Sulfanilamide Therapy

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With the advent of a new chemotherapeutic agent which has proven unusually efficacious in its attack on the streptococcus organisms, the prognosis of cases of streptococcus meningitis has been considerably altered. Gray[1] in 1935, in a rather complete review of the literature on streptococcus meningitis, was able to find in the period from 1901, only sixty-six cases of recovery. At St. Louis Children's Hospital[2] there had been no recovery recorded until 1937. Canfield,[3] in reviewing the 33 cases at the University of Michigan Hospital, found recovery to have taken place in but one instance. Schwentker[4] and his co-workers at Johns Hopkins Hospital state that not a single case recovered during a fifteen year period. The mortality rate has been quoted from 91.6 per cent. by Tripoli[5] to 97 per cent. by Gray.[1] In contrast to the preceding we see a considerably altered picture at this time. Relatively numerous recoveries from proven cases of strep. meningitis are being recorded. Trachsler[6] and his co-workers report four recoveries, of seven patients treated with sulfanilamide, although several of these patients also received anti-streptococcus serum. Silverthorne[7] reports five cases of recovery of nine patients treated. These and many others tend to definitely prove the value of sulfanilamide as a therapeutic agent in streptococcus meningitis.

The case reported here, aside from being the first to recover in this hospital, brings out several points of interest which heretofore have not been particularly stressed.

E. S. A five year old male, whose past history is entirely negative, was the second of four children in the family to contract scarlet fever, which occurred just one month preceding his meningeal symptoms. At that time he was rather acutely ill and had considerable fever for several days. Following this he seemed much improved and the course was uneventful until two weeks after the onset, when fever reoccurred, and without apparent complaint there was spontaneous rupture of both tympanic membranes. Again, the child was seemingly improved, drainage from the ears continued rather profusely, and it was just two weeks after the ears began to discharge that symptoms again were noted. At this time there was high fever, marked drowsiness and vomiting. The child was seen by the family doctor, who found evidence of meningeal involvement and sent the patient to the hospital.

On admission, the temperature was 104°, the child was critically ill and quite stuporous. Hearing was definitely diminished. There was considerable flaky desquamation of the extremities. No petechiae were seen. There was drainage of thick pus from both M. T., with edema, redness and tenderness to deep pressure over the right mastoid area. Examination of the fundi showed fullness of veins with slight blurring of disc margins. The nose and throat were typically post-scarlet. The heart and lungs were negative. The spleen could not be palpated. There was marked muchal and back rigidity with much pain on flexion of the neck and back. The Kernig and Babinski signs were positive, as was the Burvzinski. Tendon reflexes were markedly hyperactive. Lumbar puncture was done and a turbid fluid under increased pressure found. Jugular pressure gave no evidence of block. Direct smear showed numerous pus cells, but no organisms.

Course and Treatment: The child was immediately given 200 cc of 10 per cent glucose intravenously, and saline subcutaneously. Sulfanilamide in dosage of 2 grams every four hours by mouth was given. Although the amount of the drug was to be diminished after several doses, the apparent tolerance, plus the rapid improvement evidenced by the patient, prompted the continuation of the large amount. After twenty-four hours the stupor was less and the mastoid signs had practically disappeared. Intravenous glucose and subcutaneous saline were given daily. Lumbar puncture was repeated every other day and the spinal fluid became progressively more clear, with a diminution in cell count. The first two fluids cultured showed numerous colonies of hemolytic streptococci; thereafter cultures were negative. The temperature completely subsided after seven days, and at this time the dose of sulfanilamide was cut in half, and after two days, in third. Then in several days the patient was getting only .3 grams every four hours. However, two weeks after hospitalization, the temperature spiked, the patient complained of pain in the region of the right mastoid area, and redness and tenderness reoccurred. The dosage of sulfanilamide was immediately increased with rapid response in alleviation of symptoms. Lumbar puncture at this time revealed an increase in cell count. Following the subsiding of mastoid signs and symptoms, the child continued to show rapid evidence of recovery, and other than a left external otitis media, was ready for discharge just one month after hospital admission.

Laboratory Findings: On admission red blood count 3,000,000; hemoglobin 10 grams, (63 per cent); white blood count 17,000, with considerable shift to the left. Urine showed trace of albumin with 0 to 2 white blood cells per H.P.F., no casts, or red cells seen. Blood culture taken at time of admission was reported negative. Patient was typed for transfusion on admission; however, a compatable donor could not be found. Fifteen days after admission, red blood count was 3,400,000; hemoglobin 11 grams (69 per cent); white blood count 14,200 with still some shift to the left. X-ray of mastoids on admission as reported by Doctor DeHollander,

radiologist. Examination of the mastoid plates shows a cloudiness of the right mastoid cells. No definite fluid is present in the periantral region. Left mastoid appears normal. Impression: mastoiditis right.

Re-examination of the mastoid, two weeks later, shows a slight cloudiness of the mastoid cells of the right side but no breaking down of the bone. There is no definite change since the previous examination. These findings would indicate a congestion of the membrane of the mastoid cells.

The following table shows the results of lumbar puncture and the amount of sulfanilamide given from day to day:

Date	Cell Count	Culture	
Feb. 20, 1938	2,400	Hemolytic Strept.	Sulfanilamide 2 gms. every 4 hours 2-20 to 2-27
Feb. 22, 1938	500	Hemolytic Strept.	
Feb. 24, 1938	400	Negative	
Feb. 26, 1938	165	Negative	1 gm. every 4 hours
Mar. 1, 1938	55	Negative	2-27 to 3-2
Mar. 5, 1938	110	Negative	10 gr. every 4 hours 3-2 to 3-5
			5 gr. every 4 hours 3-6
			20 gr. every 4 hours 3-8
			10 gr. every 4 hours 3-11
Mar. 12, 1938	22		
Mar. 18, 1938	8	Negative	3/12 Discontinued

COMMENT

The points of interest here, aside from the factor of recovery, pertain to the size of the dose of sulfanilamide employed and the apparent subsidence of mastoid symptoms without operative interference. Unfortunately, facilities were not available for the determination of the concentration of sulfanilamide in the blood, as demonstrated by Marshall, and it is quite possible that doses of this proportion were not necessary for clinical recovery. It has been pointed out that if a concentration of 10-15 mgm. per cent. of sulfanilamide can be maintained in the blood, the likelihood of therapeutic effects are increased. Obviously, when it is possible to have such determinations, they should be done. However, in communities where this is not possible, larger doses in properly chosen cases should be used, rather than giving an insufficient amount, and when failure occurs to regard the outcome as a failure of sulfanilamide. This patient was cyanotic, but at no time was there any dyspnea. The red blood cells and hemoglobin were not diminished, and the white blood cells apparently not influenced. Although numerous toxic effects of the drug have been described, still, in cases of streptococcus meningitis one can hardly be too greatly influenced by the possibility of reactions.

In reviewing recent reports of recoveries of streptococcus meningitis, following mastoiditis, with or without septicemia, I was unable to find an instance where mastoidectomy, unilateral or bilateral, had not been resorted to. This has been advocated as a procedure to be carried out early, even in the face of negative x-ray findings. Consequently, this case, in which definite clinical and x-ray evidence of mastoid was noted, with subsidence, although operative measures were not employed, makes one feel that the importance of early cleaning out of the mastoid is perhaps overemphasized and in some cases may not be a necessary procedure. Again, one must not overlook the possibility of a recurrence of symptoms at some time after the acute process, and even the formation of a localized meningeal process (abscess) must be kept in mind. Undoubtedly, this is entirely an individual factor and it will be interesting to note if, in other cases of this character, watchful waiting for subsidence of mastoid symptoms, rather than immediate operation, may result in recovery without subjecting the patient to the added strain of a mastoidectomy in the acute stage of his illness, or even at a later period, if further evidence of activity is absent.

SUMMARY

A report of a recovery of a case of post-scarlet mastoiditis, complicated by streptococcus meningitis.

Large doses of sulfanilamide were given, orally, over a relatively long period of time, without any apparent untoward effects.

Despite the clinical and x-ray evidence of mastoid infection, operative interference was deferred and recovery was eventually complete.

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I wish to thank Doctors W. Martini and John Deal for their ready co-operation in the management of this case.

Myers Building.

BILATERAL ASYMMETRICAL HERPES ZOSTER

(Following tryparsamide therapy)

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CHICAGO

Medical literature mentions various arsenical compounds as possible etiologic factors in herpes zoster. Tryparsamide, however, is not cited as such an etiologic factor.

Bilateral herpes zoster is a relatively rare condition. It is, therefore, of interest to report a case of bilateral herpes zoster developing during the administration of tryparsamide to a man suffering from general paresis.

REPORT OF CASE

Mr. E. S. L., aged 66, was first examined by Dr. Meyer Solomon on December 12, 1935, who reported that the patient was mentally slow; comprehension very poor and patient was unkempt; disoriented as to time, place, and person; unable to give correctly the day, the month, and the year; did not know the name of the president of the United States, the governor of Illinois, or the mayor of Chicago in which he lived; he was unable to make the simplest arithmetical calculations and could not count beyond twelve; he could not repeat test phrases.

The history of the onset and development of his mental condition was not obtainable, since he had been living alone; but it was reported that he had been failing rapidly for at least one year. Physical findings were essentially negative; blood Wassermann and Kahn tests proved to be four plus. Spinal fluid showed globulin two plus, Wassermann four plus, Lange colloidal curve 5,555,554,321. Cultures after 24 hours were negative, and smears showed no organism.

He was sent to a private sanitarium December 20, 1935, where he remained until June 2, 1936. During this period he was twice inoculated with tertian malaria, inducing fourteen attacks of chills and fever, and being terminated by quinine.

On June 16, he was given tryparsamide therapy, beginning with one gm. and increasing to two gms. at weekly intervals; and on July 15, he developed a painful eruption on the right side of his chest, consisting of erythematous patches covered with grouped, deep-seated vesicles. Local therapy gave no relief, and on August 31 he was referred to me.

Examination then showed a typical eruption of herpes zoster on the right side over the area supplied by the seventh thoracic nerve, consisting of a marked erythema, a number of confluent and discrete vesicles, and hemorrhagic crusted lesions, extending around the trunk to a point a little beyond the mid-line, both anteriorly and posteriorly. The skin over the involved area was hyperesthetic, and the glands in the right axilla were



Fig. 1. Herpes zoster following tryparsamide therapy.

painful. No other skin lesions were present over the rest of the body. He was given 1 cc. of posterior pituitary extract (surgical pituitrin) which was repeated on September 2, 6 and 10.

On September 16 he complained of a painful skin eruption over the left hip. Examination revealed lesions over the fifth lumbar and first sacral vertebrae and extending over the left hip and buttocks to the midline of the lower portion of the abdomen and groin. This eruption consisted of groups of vesicles on an erythematous base, many of which had become hemorrhagic and some of which had become ruptured.

On October 8 the patient was presented at the staff meeting of the dermatologic department at Northwestern University, which concurred in a diagnosis of bilateral herpes zoster.

SUMMARY AND CONCLUSIONS

1. Bilateral asymmetrical herpes zoster is rare, and its occurrence during the administration of tryparsamide has not been reported.

2. Pituitrin extract treatment for the control of pain in herpes zoster has been favorably reported. In this case, however, although pain was relieved, the administration of pituitrin extract did not prevent the occurrence of the bilateral eruption, that is, the lesions over the left hip.

185 N. Wabash Ave.

INTRACRANIAL BIRTH INJURY

Etiology, Diagnosis and Treatment Difficulties

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Approximately one-half of all infants either still born or dying within the first few days of life reveal at autopsy some kind of laceration of the dura mater, particularly of the tentorium. Fifty per cent. of these lacerations cause enough hemorrhage to account for death. When occurring in the full term infant, dural lacerations and subdural hemorrhages are most common. In the premature infant a subarachnoid hemorrhage of the diffuse type occurs and gross cerebral hemorrhage and subventricular hematoma are especially in evidence.

Etiology. Almost two-thirds of the mortality in intracranial hemorrhage occurs in premature infants. A fetal mortality of 20 per cent. is associated with contracted pelves, especially with occiput posterior positions and following forceps delivery. Hemorrhage of the intracranium has been shown by Banerjee to account for 80 per cent. of the mortality following breech extraction and podalic version.

When the head passes through the pelvic brim, the vertical diameter is shortened by the overlapping of the two parietal bones. Normally lengthening of the head is anterior posterior and not vertical. During occupit posterior positions, brow and breech presentations with deflexion of the head there is a vertical lengthening of the head. The vertical diameter of the after-coming head increases with its first contact with the pelvic brim. This invites injury to the intracranium and hemorrhage.

The ability of the skull bones to accommodate themselves with the least danger to the contents of the intracranium depends to a marked degree upon their maturity. The cranium of the premature infant is not as able to withstand mechanical shock during childbirth as the term infant. Mechanical shock may result from a contracted pelvis, a rigid or a resistant perineum, a hasty or prolonged labor, and a brutal or unscientific operative measure. Yet, it may appear in the process of a simple spontaneous delivery.

The presence of hemorrhagic disease in the new born plays a leading factor in the cause of intracranial hemorrhage. Its origin is unknown, but it is suspected of being a generalized systemic process. Javert feels that increased circulatory tension caused by the forces of labor may produce a separation of the capillary endothelial cells of smaller blood vessels, thereby producing the multiple hemorrhagic lesions in the various organs. Laboratory tests of the infant's blood at birth will aid in diagnosis. Irving at the Boston Lying-In Hospital states that 40 per cent of infants who show hemorrhages of the intracranium have hemorrhages elsewhere in the body. Four-fifths of all infants weighing less than 1,000 grams show evidence of intracranial hemorrhage. The connecting tissue supporting structures and the blood vessels of premature infants do not easily resist the normal forces of labor and delivery. It is difficult to class intracranial hemorrhage as being due to a natural tendency of the new-born infant to bleed or due to birth injury directly. It would seem that it may be due to a combination of the two theories.

Diagnosis. The diagnosis of intracranial hemorrhage may be difficult or impossible. The classical signs of convulsions and blood in the spinal fluid are often lacking. Symptoms of the most extensive hemorrhage may not appear until late. Then, too, symptoms which on the surface point definitely to an intracranial hemorrhage may reveal nothing on the autopsy table. There are other instances, however, where diagnosis is apparent when associated with hemorrhagic areas in the skin or the appearance of blood in the stools.

The immediate and early symptoms may resemble concussion of the brain. Nystagmus alternating with intervals when this condition is not seen is common. Rhythmic rolling of the eyes may be present. Retinal hemorrhage is not uncommon. Peculiar attacks of breathing where apnea and cyanosis interrupt normal respiration may be in evidence. Spastic or irregular convulsive seizures have definite but limited value. A number of conditions are associated with convulsions in the new born.

Febrile diseases, deficiencies of metabolism, sepsis, erythroblastosis, pyelitis and pneumonia may show signs of cerebral irritation. Tetany of the new born may be present, but the absence of laryngismus stridulus and carpopedal spasm differentiates it from the type seen in older children. Convulsions due to hypoglycemia is not

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uncommon. Here one finds a blood sugar of 50 mgms. or less per 100 cc. These infants usually spring from diabetic mothers. Changes in the blood supply to the brain in the presence of a congenital heart lesion may initiate twitching.

Meningitis may resemble intracranial hemorrhage, but spinal puncture and a study of the spinal fluid will indicate the diagnosis. Cerebral edema, also known as cerebral congestion and sterile meningitis, is often indistinguishable from hemorrhage of the intracranium. It is far more frequent than ordinarily suspected. Grulee states that, "when a child recovers from symptoms due to an intracranial lesion, the nature of which has not been determined, the burden of proof rests with him who claims the condition is an intracranial hemorrhage instead of a cerebral edema." Following childbirth there is a hypersecretion of spinal fluid in the infant with edema which reaches its maximum from the third to the fifth day. Symptoms of cerebral irritation often manifest themselves at this time.

Congenital defects of the brain may cause convulsions. Agenesis or hypoplasia of the brain may be present. Hydrocephalus in many instances is not recognized by the physician. It, too, may initiate cerebral irritation. X-ray will disclose the dilated ventricles.

Spinal puncture is advocated as an aid to diagnosis. There are a number of cases on record where positive blood spinal punctures later showed no involvement of the intracranium and instances where no blood was secured in the presence of a marked intracranial hemorrhage. Spinal puncture to be of value should not immediately succeed a previous one; red cells, if present, should have undergone degeneration and exanthrochromia should be in evidence. Fresh blood in the spinal fluid is often due to trauma incident to the spinal tap.

The value of increased spinal pressure also has its limitations. The position of the baby's body at the time of puncture, the character of the infant's respiration, the presence of crying, all can so influence the amount of fluid withdrawn that its significance is greatly reduced.

The relation of cerebral birth hemorrhage to later faulty physical and mental development is vigorously debated. Any statement regarding prognosis is dependent upon whether or not intracranial hemorrhage or cerebral edema was present. Recovery from cerebral edema occurs readily, whereas hemorrhage of the intracranium inevitably leaves a damaged brain. It has been estimated that 40 per cent. of premature infants with supposedly spasmophilic convulsions in the first and second years of life will later develop cerebral defects of varying degrees. The presence of infantile convulsions per se multiplies the individual's ordinary chances for later epilepsy by at least five. Actually, however, the great majority of infants with a history of one convulsion escape epilepsy. This is no doubt true, due to the presence of a cerebral edema.

That there is a definite relationship between birth trauma and cerebral hemorrhage and epilepsy is brought out by Ehrenfest, who found that the incidence of convulsions in an epileptic group was about twice as large within the first week's postpartum, and three times as large within the first five months of life than in the corresponding ages of a non-epileptic group.

Treatment. Treatment of intracranial hemorrhage is limited. The correct management of this condition depends upon prophylaxis and prevention. Prophylaxis calls for adequate prenatal and intrapartum care of the childbearing woman and fetus. Any condition in the mother which foretells a difficult, long or impossible labor must be studied and remedied. Cephalpelvic disproportion, contracted pelvis, obstructive anomalies, debilitating diseases, toxemias of pregnancy, placenta previa, etc., are included in this group, and call for adequate supervision. Every effort to prohibit the induction of premature delivery and premature birth should be instituted. Excessive compression of the fetal head during the second stage is strongly condoned. When operative means are attempted, intracranial hemorrhage is less likely to occur if care and scientific intelligence are present. The man behind the extraction often turns a difficult situation into success.

A common cause of intracranial hemorrhage is the attempt to effect delivery through an undilated cervix. Low forceps when properly applied are definitely indicated in conditions where the head is on the perineum, but will not advance further. Irving wisely warns that the second stage of labor should not be made an endurance contest between the pelvic floor of the mother and the cerebral circulation of the infant.

Rupture of the membranes has often been

an indication for the institution of premature labor through fear of infection. Studdiford at the Bellevue Hospital reported that for three years this condition has been treated by keeping the patient in bed. If the cervix is soft and elastic, the patient usually goes into labor in 24 hours. If the cervix is long and rigid, she may go for days or weeks before labor begins. There is little danger, he feels, in using this conservative treatment so long as infection is not carried in from below by vaginal or rectal examinations.

During the second stage of labor the forces of expulsion should be shortened and lessened to decrease the possibility of injury to the intracranium. This may be accomplished by anesthesia and episiotomy for the mother and by the correct application of low forceps. Pressure on the after coming head during breech extraction to reduce vertical elevation of the cranium and encourage flexion should not be done too vigorously. This may cause herniation of the medulla through the foramen magnum with resulting death. Voluntary efforts of the mother to expel the fetus in the presence of resistant soft parts is not advised. Restraint to the infant's head to prohibit a precipitate delivery may also cause intracranial hemorrhage.

Impending asphyxia of the fetus must be recognized and steps taken to avoid a fatal result. Continued irregularity of the fetal heart rate, a rate above 160 or below 100, is suggestive of a gaseous exchange with the mother. Asphyxia may result from prolonged and unprogressive second stage of labor.

Active treatment of intracranial birth injury is unsatisfactory. When hemorrhage of the intracranium has actually occurred, the brain in most instances is beyond therapy. However, many clinicians feel that spinal puncture as a diagnostic and therapeutic agent has value. When properly done, in correlation with other signs, it may throw light upon an otherwise baffling condition.

Puncture of the cisterna magna has been advocated to aid in diagnosis and relieve pressure. Operative procedures upon the cranium have been attempted with limited results. Injection of whole blood from either the mother or father, 15-20 cc. two or three times daily into the infant's thigh, buttocks or back muscles is perhaps our most effective form of therapy. It is of particular value in the presence of lowered coagulability of the blood or hemorrhagic disease. Sedation and rest of the bleeding organs are desired. In the presence of anemia or when the intramuscular blood has failed, transfusion is indicated. Whole blood may be used following a long or difficult labor of a premature or term child, as a prophylactic measure. Gelatine has been used to control gastro-intestinal bleeding with indifferent success.

CONCLUSIONS

1. Intracranial birth injury occurs during protracted, spontaneous or operative delivery.
2. Hemorrhagic disease of the new born plays a contributing part.
3. Prematurity of the infant accounts for two-thirds of all cases of intracranial injury.
4. Many so-called intracranial hemorrhages may be conditions of cerebral edema.
5. When cerebral hemorrhage occurs it leaves a damaged brain.
6. Treatment has its greatest value in prophylaxis, by preventing premature birth, by liberal use of episiotomy and low forceps, by avoidance of unscientific operative procedures, and by careful attention to conditions in the mother which predispose to dystocia.

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HOPE SPRINGS ETERNAL

The minister had just finished conducting the funeral services of a good woman, and was consoling the bereaved husband.

"You have lost your wife," the pastor said, "but there is one who loves you and will watch over you until your sorrow is but a sweet memory."

"Do I know her?" asked the widower, as he dried his tears.

CIRCUMSCRIBED PERFORATIVE OSTEOMYELITIS OF THE FRONTAL SINUS

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Osteomyelitis of the bones of the cranium may well be termed a dire disease. It is of ever present interest because of its too frequent occurrence, the severity of the complications and the regrettably high mortality rate. The problem of management is often perplexing and may require a judicious choice between patient, efficient conservatism in some cases and early, extensive surgical procedures in other instances.

The diagnostic, pathologic and therapeutic aspects of osteomyelitis have been elucidated in authoritative articles by McKenzie,[1] Furstenberg,[2] Wilensky,[3] Mosher and Judd[4] and others. Behrens[5] recently has presented a comprehensive review of the subject.

In osteomyelitis following disease of the paranasal sinuses, the frontal sinuses are the most frequent origin of the infection. Bulson's[6] collected statistics are instructive. In 26 cases of spontaneous osteomyelitis of the frontal bone complicating acute or chronic frontal sinusitis there were 14 deaths and 12 recoveries following various procedures. The mortality rate was 53.8%. In 29 cases of osteomyelitis following surgical treatment for frontal sinusitis there were 23 deaths and six recoveries. The mortality rate was 79.3%. Although the death rate was high in both groups, the prognosis was definitely better in the spontaneous cases than in the postoperative group. Further, in osteomyelitis following acute frontal sinusitis the mortality rate was 59.7% compared to 75% in cases occurring after chronic infections of the sinus.

To a great extent the end-result seems to depend also on the etiologic organism and the location and character of the bone involvement. Some cases are more amenable to management. The following report illustrates a more fortunate outcome and some features of the treatment.

HISTORY OF CASE

C. S., aged 28, a sales executive, had been ill with an attack of grip of one week's duration. When first seen on January 21, 1937, his complaint was of malaise, pain in the right ear, and profuse, thick, greenish nasal discharge. Severe headache was present including pain in the upper teeth on each side. On examination there was found slight injection of the right tympanic membrane. The tonsils were moderate in size and not acutely inflamed. The pharynx was injected. The nasal septum was deflected to the left. Considerable mucopurulent secretion was present in the inferior and middle meati on both sides. The turbinates were turgescent. The temperature was 100.2 degrees F. Nasal shrinkage followed by mild suction yielded a good deal of pus.

The management instituted consisted of rest in bed, a nutritious diet, adequate fluid intake, sedatives, and a vaso-constricting solution for nasal instillation.

Three days later swelling and redness of the left upper eyelid occurred. The patient was hospitalized to permit energetic treatment. Roentgenograms revealed extremely well-pneumatized sinuses, the frontals extending to the lateral margins of the orbits. The supraorbital ridges were prominent and contained well developed orbito-ethmoid cells. With the exception of the sphenoids, all of the sinuses were uniformly clouded. The diagnosis was bilateral pansinusitis. Nasal shrinkage and suction twice daily evacuated considerable pus. The middle turbinates on each side were infracted to facilitate drainage from the upper sinuses. Infra-red light therapy was started, giving 15 minutes exposure four times daily. Post-nasal displacement instillation of 0.5 per cent ephedrine in normal saline was done twice daily. On the 26th the antra were irrigated by puncture through the inferior meatus with return of a large amount of pus. Thereafter washings were done every other day.

Despite all efforts the orbital swelling continued to increase, becoming fluctuant on the 31st. The temperature was 101 degrees F., and the white blood count 9,600. Over the lateral third of the supraorbital ridge tenderness and crepitus were present, indicating spontaneous perforation of the anterior wall of the frontal sinus or one of the supraorbital ethmoid cells. A 3.5 cm. incision was made along the orbital rim, evacuating about 15 c.c. of pus. Roughened bone could be palpated by probing. Further exposure to locate a fistula was deemed inadvisable at the time of the acute infection.

Subsequent improvement was rapid and the patient left the hospital on February 5th. It was the intention to build up the general resistance and eliminate the infection from the other sinuses before eradicating the area of circumscribed osteomyelitis around the perforation and the residual involvement of the left frontal and ethmoid sinuses. Unfortunately, on February 22, there occurred an acute follicular tonsillitis, followed by erysipelas beginning at the lid incision. On hospitalization the patient's temperature was 102.8 degrees F., the white blood count 11,600, the red blood count 4,850,000, and the hemoglobin percentage 80. 100 c.c. of pooled convalescent scarlet fever serum was given intravenously on the 22nd and 40 c.c. on the 26th. Ultraviolet light therapy was employed in exposures of 5, 7, 10 and 12 minutes on successive days. The erysipelas subsequently extended entirely around the face and part way down the neck, finally subsiding by March 2nd. For several days thereafter the general condition was good. There was no severe prostration. The temperature was low and headache slight. The ocular

fundi were normal. There were no signs of meningeal invasion. The continued puffiness of the forehead was thought to be resolving swelling of the erysipelas.

On March 8th headaches returned accompanied by an area of edema about 3 cm. in diameter over the glabella. The temperature was 103 degrees F. Culture of the blood was negative. A suspicion was entertained of extension of the localized osteomyelitis to the frontal bone beyond the sinus area. Sinus x-rays showed persisting cloudiness of the left frontal sinus, a break in the supraorbital line and indistinctness of the sinus floor. The frontal bone was not altered. The antra were clear. Operation was advised but the patient's family demurred as the temperature again dropped to normal. On March 10th there was a recurrence of a chill and a temperature rise to 104.2 degrees F. The white blood count was 16,000, with 94% polymorphonuclear leucocytes and a shift to the left of the Schilling index. Culture of the blood was positive for Streptococcus hemolyticus.

Operation under ether anesthesia was performed the next day. The head was shaved and prepared for possible extensive resection of the frontal bone. An incision was made beginning 0.5 cm. medial to the inner canthus, curving upward and laterally along the supraorbital margin toward the external angular process to join the former incision. At the medial end a vertical extension was made upward for 4 cm. over the glabella. Hemostasis was obtained by ligating vessels and by the use of epinephrine packs. The periorbita was separated from the orbital wall and the eye displaced downward and laterally. The periosteum was dissected away from the anterior wall of the frontal sinus revealing a fistula about 8 mm. in diameter located in the lateral third of the supraorbital margin. Pus-covered granulation tissue projected through the opening. The fistula was enlarged and the frontal sinus entered. Considerable pus was evacuated and the hyperplastic mucosa carefully removed by stripping, avoiding the use of curettes. The necrotic anterior sinus wall was removed to within 0.5 cm. of the junction with the posterior wall. The latter was intact. Necrotic bone in the floor of the sinus was removed for a distance of 2 cm. posteriorly toward the apex of the orbit until normal bone was found. The lacrimal bone and a portion of the lamina papyracea were then removed, allowing access into the ethmoidal labyrinth. The anterior ethmoid cells were exenterated until the naso-frontal duct permitted passage of a number six Ritter dilator. The interfrontal septum was broken through. There was no active disease in the right frontal sinus. Careful inspection of the remainder of the frontal bone revealed no gross changes. The sinus cavity was packed with iodoform gauze. Only the medial third of the incision, including the vertical extension, was sutured.

A spinal puncture was done after the completion of the operation. The fluid was clear and the pressure was decreased. Examination showed 15 lymphocytes per cu. mm. Smear, culture and globulin tests were negative. Culture of the pus from the necrotic bone revealed hemolytic staphylococci and streptococci.

The postoperative reaction was less severe than might have been anticipated. On the second day the temperature reached 104 degrees F., accompanied by a brief chill. Twenty-four hours later it declined to normal and remained so thereafter. A total of 100 c.c. of convalescent serum was given intravenously in three doses. The dressings in the open sinus cavity were kept saturated with a lysed bacterial antigen filtrate previously prepared from the hemolytic streptococcus obtained in the positive blood culture. The general condition rapidly improved and the patient was discharged from the hospital on March 25. The frontal cavity was dry and the nose entirely free from suppuration.

On April 16th the incision was closed by mobilizing and suturing the edges. The anterior third of the middle turbinate was removed. The naso-frontal duct was still patent. Despite rapid granulation tissue formation the sinus cavity was only partially obliterated because of its great depth. The deformity of the forehead was moderately noticeable, due in part to the prominence of the right supraorbital ridge.

On October, 1937, there was a recurrence of the suppurative sinusitis, which responded to management in a week with no troublesome involvement of the sinuses previously operated upon. The external deformity at this time was about one-third shallower than its former depth. Diplopia was still present. This was expected in view of the extensive removal of bone.

COMMENT

The necrosis in this instance was limited to the compact bone of the anterior wall and the floor of the frontal sinus. The absence of involvement of the diploic portion of the frontal bone accounted for the failure of widespread progression of the lesion with more severe consequences. In view of the slow spread of the process and the good general condition of the patient, conservative management, with maintenance of free drainage both intranasally and through the lid incision, seemed indicated until the subsidence of the acute infection and the termination of the erysipelas.

The symptomatology of simple perforation of the floor of the frontal sinus includes pain, proptosis and orbital abscess, while an anterior wall lesion is indicated by edema over the glabella, possible subcutaneous abscess, and x-ray evidence of loss of continuity of the bone.

There is a discrepancy between finding a hemolytic streptococcus in the blood and that organism plus a hemolytic staphylococcus in the culture from the necrotic bone at the operation. It is possible that the blood-stream invasion may have been due to the erysipelas.

The ultimate cure in this case was accomplished by the complete removal of all of the

necrotic bone in the anterior wall and floor of the frontal sinus. The convalescent serum administered was probably of value in combating the sepsis, even though its effect in controlling the spread of the erysipelas was less apparent. The autogenous antivirus seemed to have a definite beneficial action. This specific procedure is favored by Furstenberg and by Williams and Heilman.[7] The latter have described the technic of its preparation.

Wilensky[3] classifies osteomyelitis of the cranium on the basis of the extent of the lesion and the rapidity of the spread, as follows:

1. Perforating lesion, due to pressure of pus within a sinus with absent or insufficient drainage from the normal ducts. This may be termed osteitis.

2. Localized lesion, slowly progressive over months or years with eventual sequestration and healing.

3. Spreading lesion, rapidly involving the whole skull and going on to severe or fatal intracranial complications.

Individual variations in severity occur in these lesions. A clinical evaluation of the type and potential activity of the process must be made by all possible diagnostic means to determine the proper course to pursue. That spreading osteomyelitis requires early complete removal of bone well beyond the extent of the lesion, definitely has been established. However, a plea for conservatism in certain types of less active infections is advocated by some writers. (Dixon,[8] Blair and Brown[9].)

Behrens indicates that the conservative attitude is contingent on the presence of a low-grade osteomyelitis with a tendency to become circumscribed, on the low virulence of the infecting organism and on a good body defense-mechanism. He further summarizes that "the conservative method consists essentially of draining abscesses as necessary, of operating only when it appears clearly indicated, that is, if possible waiting until acute infection has subsided somewhat, and then being content with removal of sequestra and most of the infected bone, of not stripping the periosteum more than necessary, of searching for extra-dural abscesses, of not curetting and not incising the dura until one is sure that there is an abscess of the brain which has become well localized." Other supportive measures employed in conjunction with this method include blood transfusions, especially from immune donors, tonics, hematinics, vaccines, antitoxins, nutritious diet, heliotherapy and general hygiene.

Williams and Heilman state that in a localizing type of osteomyelitis the infective process may be completely isolated by reactive barriers with eventual marginal sclerosis of bone. In that event they await later separation of the diseased bone and simply remove the sequestrum. They recognize that failure of localization of the infection, after sufficient time has elapsed, makes imperative the radical excision of diseased bone.

Perforative lesions of the wall of the frontal sinus, limited to compact bone, cause a circumscribed necrosis which usually spreads slowly with little tendency to involve diploic bone. This affords a degree of assurance in delaying operation until optimum conditions are present.

SUMMARY

A case is presented of bilateral pansinusitis followed by circumscribed osteomyelitis of the anterior wall and floor of the left frontal sinus due to spontaneous perforation. The course of the disease was complicated by orbital abscess, erysipelas and Streptococcus hemolyticus septicemia.

Recovery followed drainage of the orbital abscess with subsequent removal of the necrotic floor and anterior wall of the sinus.

Intravenous administration of pooled convalescent scarlet fever serum and local application of an autogenous antivirus were employed as adjuvant therapy.

Conservative measures may be adopted in the management of localized perforative osteomyelitis until subsidence of the acute infection, improvement of the general condition and increased resistance afford a more favorable stage for operation.

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ACUTE APPENDICITIS: ANALYSIS OF THE RECORDS OF 300 CASES

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At times, much to the chagrin of surgeons, the hazard of acute appendicitis is commonly minimized even when the condition is clear cut. Although there have been rapid strides in surgery during the past thirty years, one occasionally should take stock of present results.

I have analyzed the records of 300 cases of acute appendicitis encountered at St. Luke's Hospital between 1932 and 1937. In this paper the term "acute appendicitis" denotes that the appendix was found to be acutely inflamed at operation and was so reported by the pathologist. Thus, cases in which the appendicitis was subacute, chronic from infectious cause, or chronic from mechanical cause were eliminated from the series.

The youngest patient was aged five years, the oldest was eighty-seven years, and the average age was 26.6 years. The majority of patients were in the third decade of life (table 1). Represented in the second, third, and fourth decades were 243 patients, or 81%. Of the 300 patients, 146 (48%) were males and 154 (52%) were females. There was no appreciable difference in the average age of patients of the two sexes.

All of the patients in this series were residents of the Chicago area, and probably were representative of the patients seen in Chicago hospitals. The interval from the onset of symptoms until operation varied widely. The shortest interval was five hours and the longest was 120 hours. The average duration of symptoms before operation was 33 hours. This interval seems rather long in view of the hospital and transportation facilities of a metropolitan community.

Emergency leukocyte counts were performed in all cases, and in some cases counts were made repeatedly. I have taken for study the leukocyte count made immediately preceding operation. The lowest number of leukocytes per cubic millimeter of blood was 6,400. The patient in this case was a woman 33 years of age, who had had symptoms for 18 hours. At operation an acutely ulcerated appendix was encountered, local peritonitis, fibrinous exudate over the appendix, and a small amount of free fluid. The highest leukocyte count was 38,700. This patient was a girl of ten years of age, who had had symptoms for 96 hours. Operation on this patient revealed an acutely ulcerated appendix with localized peritonitis and a small amount of cloudy fluid. The average leukocyte count for the series was 15,875.

Two hundred ninety-one patients survived operation. Data on the incision employed, the days in the hospital, and the use of drainage in these 291 cases are given in table 2. The period of postoperative hospitalization in these cases ranged from four to 36 days, with an average stay in the hospital of eleven days. Drainage was instituted in 41 of the entire 300 cases. Drains were removed from four to sixteen days after operation. The average duration of drainage was 8.2 days.

Local peritonitis was considered to be present if there was plastic exudate or abdominal fluid localized in the region of the appendix. This condition was found in 131 (43.6%) of the 300 cases. In many instances the omentum was tightly bound down about the ileocecal region. This condition was not considered to be evidence of local peritonitis unless fluid was encountered in freeing the omentum from about the appendix.

Of the 300 patients, sixteen (5.3%) had generalized peritonitis at the time of operation. The duration of symptoms before operation in this group ranged from eighteen to 96 hours, with and average duration of 42 hours. In all of these cases the appendix was removed.

The appendix was ruptured in 27 of the 300 cases. Drainage was carried out in 25 of these 27 cases. In the two cases in which drainage was not done, one patient died on the fifth postoperative day from generalized peritonitis and paralytic ileus. The wound of the patient who survived was extensively infected but healing was complete in thirty-two days.

Nine of the 300 patients (3%) took one or more laxatives after the onset of symptoms. Of these nine patients, three died.

The symptoms of the nine patients who died varied. The average duration of symptoms of these patients was 51 hours. In no instance was

From Surgery Service "A" of St. Luke's Hospital.
Read before the Surgical Staff of St. Luke's Hospital.

the duration of symptoms before operation less than twenty-four hours. The patient whose symptoms had been present for only twenty-four hours before operation was a youth of eighteen years whose leukocyte count was 15,100. Generalized peritonitis was present at the time of operation. The appendix was removed, the stump was not inverted, and the abdomen was closed without drainage. Death occurred on the fifth postoperative day from generalized peritonitis and paralytic ileus. The longest duration of symptoms in the nine cases in which death occurred was 120 hours. The patient was a woman thirty-seven years of age, whose leukocytes numbered 8,100. Generalized peritonitis was present at the time of operation and the stump was not inverted. Three Penrose drains were inserted, two through the appendectomy wound and one through a stab wound in the right flank. Death occurred on the sixth postoperative day. This patient was one of the group who took two laxatives after the onset of symptoms. In one case, an infected wound was resutured on the twentieth postoperative day and the patient died from pulmonary embolism six days thereafter.

The postoperative length of life of the nine patients who died varied from four to thirty days. In eight of these nine cases drainage was carried out; in one instance the abdomen was closed tightly. Free fluid was encountered in each of the nine cases and generalized peritonitis was present in six. The McArthur incision was used in five of the nine cases and the right rectus incision in four. Except in the one case in which pulmonary embolism occurred, the cause of death was generalized peritonitis.

Three of the 300 patients were pregnant. In these cases the duration of pregnancy was eight, seven, and four months respectively. All of these three patients subsequently were delivered of babies at full term. This is a tribute to the surgeon in each instance. In one case, parturition occurred seven weeks after appendectomy.

DISCUSSION

Dr. Selim W. McArthur, Chicago: This paper, reviewing 300 consecutive cases of acute appendicitis, all done at the same hospital under similar conditions, in which the pathology has been established by one pathologist, presents some very interesting points.

The factors involved in the mortality of acute appendicitis such as 1. the injudicious giving of cathartics during the onset of the disease; and 2. delay in operative interference have been so thoroughly discussed and their importance so well established during the past five years, that it is not necessary to make further comment here.

The factor of the type of incision used is of great interest. The muscle-splitting or gridiron incision has been used routinely on the McArthur surgical service at St. Luke's Hospital in many thousands of cases since 1894, and there is no question in the minds of all the men connected with this service that it presents a great advantage over either the right rectus or mid-line approach. First, in the vast majority of cases, it is not necessary to handle or even see the small intestine, nor injure large peritoneal surfaces by manipulation and packing off with gauze pads. Second, where drainage is necessary, the drains usually do not come in contact with the small bowel if properly placed and used. Third, postoperative hernia is almost a physical impossibility. Fourth, this incision makes for greatly diminished time in closure and greatly diminishes the amount of foreign body catgut necessary to be buried. Fifth, and as so definitely shown by this unbiased review, it diminishes the postoperative hospital days and hours of confinement to bed.

There can be no doubt that if a patient with a right rectus incision is permitted to be up and about before the tenth to the twelfth day there will be a high incidence of postoperative herniae, and further, these patients must be cautioned against exercise for at least sixty days. On the other hand, a properly done muscle-split incision under average circumstances should enable the patient to be up on the third or fourth day, to go home on the eighth and ride horseback by the tenth to twelfth day so far as danger of herniation is concerned.

Sixth, in a large series of cases, it will surely be shown that there is a very definitely lower mortality rate where a muscle-splitting incision is used as compared with a right rectus or a mid-line incision.

The muscle-splitting or gridiron incision, known the world over as the McBurney incision and graciously alluded to here by the writer as the McArthur incision, perhaps should be designated more properly as the McBurney-McArthur incision, because whereas it was discovered and utilized by these two men independently in 1894, McBurney's description of the procedure antedated that of McArthur by several months in the literature. McBurney at the time had used it for a few months only, and advocated it exclusively for interval appendices, while McArthur had used it in more than sixty cases over a period of three years prior to reporting it and advocated its use in all fulminating types of appendicitis. McBurney in writing, acknowledged L. L. McArthur's priority in the use of this incision.

Finally, in the discussion of these 300 cases there are other factors involved whose influence cannot be fully analyzed from such a small amount of accurate data. This alludes to the type and management of drainage materials which is of great importance, the type and technique of operative procedure which can never be properly evaluated in surgical statistics, and lastly, the postoperative management which in serious cases is of equal importance with the operation.

Such summation of work done in a large hospital as the writer has accomplished here is of great value to all concerned and is to be greatly encouraged always.

Dr. Harold E. Jones, Chicago: In reviewing this group of 300 cases of acute appendicitis, pathologically confirmed, the fact which stands out most prominently and the one in which we are all most interested, is the mortality rate of three per cent. This figure, in itself, compares very favorably with reports from other hospitals in other sections of the country, but it should and can be definitely lowered by means of early diagnosis and early operative treatment. In fact, these statistics show very clearly that the average duration of the disease was fifty-one hours in those cases which proved fatal. This long delay in the recognition of the condition and the operative treatment should be eliminated in great part by constantly keeping the subject before the profession. Reports of this type are of great value, not only in relation to our own work, but in stimulating others to improve their ultimate results.

Many other factors, such as the type of anesthesia, type of incision, institution of drainage, postoperative care, and the character and treatment of complications, undoubtedly affect the mortality rate in the individual case. Statistics taken from the work of many surgeons without definite controls as to the above mentioned procedures are very difficult to evaluate.

Just a word as to the use of drainage in cases of ruptured appendicitis. In this series of three hundred cases, twenty-seven were encountered in which the appendix was ruptured. Only two of these were not drained, one died on the fifth postoperative day of generalized peritonitis and paralytic ileus, and the other had an extensively infected wound which required thirty-two hospital days. A shocking mortality of fifty per cent and nearly twice the number of hospital days for the patient who survived, as compared with an average of 17.3 hospital days for all the other cases in which the drainage was instituted, is not to be overlooked. Our own experience leads us to continue the use of drainage in these cases and to condemn the present tendency to practice primary closure.

I am sure that this review has been most enlightening to all of us and I hope that in the future it may be continued and extended to cover other surgical conditions.

122 South Michigan Avenue.

TABLE 1

Patients, age and mortality

Decade of life	Patients: Number	Patients: Per cent of total	Deaths: Number	Deaths: Per cent of patients in respective decade
0-10	20	6.6	0	0
10-20	84	28	1	1.2
20-30	108	36	2	1.8
30-40	51	17	2	3.9
40-50	22	7.3	2	9.1
50-60	14	4.6	2	14.2
More than 60	1 (87 Yrs.)	.003	0	0
Total	300	100	9	3

TABLE 2

Incision employed, days in hospital and use of drainage in the 291 cases in which the patients survived

Incision	Drainage instituted: Patients	Drainage instituted: Days in hospital	Drainage not instituted: Patients	Drainage not instituted: Days in hospital
McArthur	20	14.9	154	8.0
Right rectus	13	19.8	104	12.6
Total	33		258	
Average		17.3		10.3

DERMOID CYST OF THE CALVARIA

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Dermoid cysts of the calvaria are rare. Of 103 cases of dermoid cyst of the head and neck seen at the Mayo Clinic,[1] there were two of the occipital bone, one of the frontal portion of the cranium, none of the parietal bone. Reported in the literature there are one case of dermoid cyst of the right parietal bone,[2] one of the left parietal bone,[3] and three of the anterior fontanel.[4, 5, 6]

Of the three cases of dermoid cyst of the anterior fontanel, two are said to have appeared in childhood following a blow on the head.[5, 6] These tumors, in the opinion of the authors, had their origin as traumatic inclusion cysts. The cyst seen by Heurtaux was congenital. This tumor was the largest of the three. When the patient came for treatment, at the age of 30, the cyst was 10 cm. in diameter. In all three cases the tumors were dissected out, and wound healing followed. The cysts were adherent to underlying craters in the skull. The patient reported by Malykhova complained of headache and petit mal before operation. These symptoms disappeared after removal of the tumor. The other two cases had no symptoms referable to the cyst.

Our case is that of a Jewish girl 13 years of age who complained of a swelling on top of the head. The tumor was present at birth, and had not increased in size recently. There was no pain associated with the lesion. Examination showed a well-developed girl of the stated age with a fluctuant swelling about 3 x 4 x 1 cm. beneath the scalp in the region of the bregma. A lateral x-ray of the skull showed a superficial, shallow crater in the bone just posterior to the junction of the coronal and sagittal sutures. Under local anesthesia the tumor was dissected out. The wall of the cyst was tough and densely adherent to an underlying shallow crater in the bone. The wound healed by first intention. The

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interior of the cyst was filled with numerous strands of hair and a yellow greasy substance.

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THE USE OF RABIES VACCINE IN THE TREATMENT OF EPILEPSY

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Probably one of the hardest entities that one has to deal with in the practice of medicine is the epileptic patient. Physically in good health, they will go from physician to absolute quackery in the search for a "cure" for their affliction.

A great many treatments have been evolved in the attempts at solving this problem. To date however, these patients still continue their never-ending search for relief.

About a year ago I had a discussion with a Southern colleague[1] who at that time informed me of a rather interesting case he had reported in which he had treated an epileptic patient with a course of antirabic vaccine and that the patient had been free from any attack for a full year when the article was reported. He stated that the patient, following treatment, had an entirely different appearance and was able to work.

Recently I found myself facing the problem of dealing with young epileptics in a State institution and remembering this case down South I went further into the literature and found the article by M. Nikolic[2] in which the author reported a case of a chronic epileptic, who after having been bitten by a dog, was given rabies vaccine. The author then noted that following the vaccine therapy, the patient had no further attacks. He immediately concluded that the resultant "cure" was due to the endotoxin of the fixed virus in the vaccine.

A little later in the literature I ran across the article by M. Tyndel and M. Pasternak[3] in which the authors tried the vaccine on ten patients with genuine epilepsy. These patients ranged from the age of twenty-one to forty-three. They inoculated rabbits with an emulsion of the fixed virus and killed the rabbits after seven days. They then prepared an extract of the brains and spinal cords. The patients were given 8 cc. subcutaneously daily for sixteen doses. They report the treatment was well tolerated but that it had no effect on the epilepsy. In view of these failures, the authors rejected this treatment.

A number of procedures, essentially non-specific in character have been tried in the treatment of epilepsy beginning with the use of serum injections by Ceni[4] in 1905; brain extract by Leon[5] in 1910; cerebrospinal fluid by Gordon in 1911 and immune rabbit serum by Held.[6]

Other authors[7] have tried various types of non-specific therapy using milk, milk and luminal, and intravenous peptone. Results have varied.

I therefore decided to try the use of rabies vaccine on my patients. With the aid of the biological division of the Eli Lilly and Company, I obtained eight packages of outdated rabies vaccine. I then chose four young women and four young men in whom I judged there was the least amount of mental deterioration. All eight had been receiving various amounts of luminal and all eight would have epileptic attacks despite the luminal.

My first step was to discontinue luminal for at least twenty four hours and observe the reactions of the patients. Each suffered greatly. In one case, the patient had such severe attacks every fifteen minutes that I deemed it urgent to return her to her luminal after a few hours of observation. Having definitely established the fact that these patients would all suffer greatly without the luminal, I returned them to what we had previously established as their maintenance dose and began giving each a daily dose of rabies vaccine in the abdomen. After the sixth dose I discontinued

TABLE 1

Patient	Diagnosis	Age	Duration of Epilepsy	Improvement
R. M. L.	Psychosis with Epilepsy	21	13 years	No improvement
H. W.	Epilepsy without Psychosis	17	17 years	Some improvement
E. F.	Epilepsy with Mental Deterioration	25	8 years	No improvement
F. B.	Epilepsy without Psychosis	17	17 years	Some improvement
R. K.	Epilepsy with Mental Deterioration	21	21 years	No improvement
J. K.	Psychosis with Epilepsy	27	19 years	Slight improvement
C. E.	Epilepsy with Mental Deficiency	31	20 years	Died
R. J.	Epilepsy without Psychosis	30	12 years	Worse

the luminal and attempted to keep them free from attacks by merely continuing with the rabies vaccine. In three of the cases, I had fair success but in all the others I had to supplement my treatment with orders for luminal from time to time.

All but two of the patients received fourteen doses. Of the other two, each received twelve doses. The results that followed can be seen at a glance on Table 1. The first four patients in the table are females and the last four are males. Only one, F. B., was able to get along completely without any luminal for about a month and a half. Following this she began having occasional very slight attacks during which she would only momentarily lose consciousness. However, since at the start, this patient was unable to be without luminal for even fifteen minutes and since she previously had had the severest attacks of the group, I feel justified in concluding that the therapy brought about some improvement in this case.

The other patients all had to be returned to luminal within two weeks following the conclusion of the vaccine treatment. H. W., whose condition was complicated by parathyroid insufficiency that had followed a thyroidectomy, was receiving 100 grains of calcium lactate daily and apparently has shown some improvement as her epilepsy now scarcely causes her any inconvenience. At the present time she is working daily in a kitchen but must take a grain and a half luminal morning and night. J. K., the only male to show any change for the better, is still on luminal but has less severe attacks than he had before treatment.

Of the two patients, both males, who only received twelve doses instead of the regular fourteen, one, C.E., underwent a sudden change in character and developed acute nephrosis. As he became uremic, I discontinued the rabies vaccine — but the patient died. At post-mortem examination, Dr. A. K. Saiki, pathologist at the University of North Dakota Medical School, reported an acute nephrosis either chemical or toxic in origin. The kidneys showed congestion and marked tubular degeneration. A number of the tubules contained hyaline casts. The glomeruli were enlarged and there was a cellular increase. The spaces contained fluid. This as far as I can ascertain is the first reported case of acute nephrosis following the use of rabies vaccine.

In the other case the patient, R. J., began showing albumin and casts in the urine in addition to generally feeling ill. He lost his appetite and was bed-ridden. After discontinuing the rabies vaccine, he gradually improved physically.

SUMMARY AND CONCLUSIONS

1. While at the present time we have no rational basis for the use of rabies vaccine in the treatment of epilepsy, I do feel that I noted some improvement in at least two of the eight cases in which I tried the vaccine.

2. The blood cholesterol is lowered at the time of an epileptic attack. The brain is one of the richest sources of cholesterol. Could the blood cholesterol be increased by the vaccine injections? And if so, would the results be better if uninoculated brain tissue were used? I certainly feel that the problem needs further workup.

3. I also feel that there undoubtedly is danger in the use of rabies vaccine. Following the death from acute nephrosis, I always checked the urines of each patient daily until treatment was concluded. In addition one must always bear in mind the possibility of paralytic accidents with the use of antirabic vaccine.

4. I believe that this approach to the treatment of epilepsy warrants further study.

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A COMPLICATION OF INSULIN SHOCK THERAPY

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Since the introduction of insulin shock therapy in the treatment of the psychoses, there has been a tendency to stress the dangers of hypoglycemia. However, in treatment of mental patients, Gleuck[1] in discussing this type of therapy said:

"The dangers of hypoglycemic state are not as great as the dangers connected with some forms of narcotic therapy."

Dussik and Sakel[2] reported three deaths in the course of treatment among their first 104 cases. These deaths were due to status epilepticus, coronary thrombosis and necrosis of pancreas.

Thus far a total of 13 patients have been treated at Chicago State Hospital with insulin. All of the patients have been schizophrenic psychoses. Among those treated were several with typical catatonic features, one of whom developed a lung abscess.

This patient had been given increasing doses of insulin until 310 units were given. At times,

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during the treatment, the patient became lucid for short intervals but immediately lapsed back into her catatonic state. Treatment was terminated after six weeks because of the tendency to delayed reactions occurring almost daily, at 4-5 P.M. Apparently the large doses of insulin administered resulted in slow absorption and an afternoon hypoglycemia. The patient did not show improvement and was discharged from treatment as unchanged.

Throughout the treatment, it was necessary to tube feed her frequently, although only rarely was the hypoglycemic reaction so pronounced as to produce inability to swallow. Resistiveness was pronounced and it was impossible to keep the patient's mouth clean, so that her gums became quite spongy at times and suggested a mild Vincent's infection. Tube feeding under trying circumstances with pronounced resistiveness was necessary on frequent occasions at noon and evening meals. The usual precautions in avoidance of aspirations were judiciously carried out whenever nasal feeding was necessary.

About two weeks after treatment was discontinued, the patient began to run a mildly elevated temperature and seemed uncomfortable. Three weeks after discontinuance of treatment she was transferred to the hospital ward for observation, where her temperature fluctuated between 101 and 103 degrees. There was dullness in the left infraclavicular area with rales anteriorly in the upper ⅔ of the chest and at the left base posteriorly. Sputum of a thick greenish brown, tenacious and foul smelling, was being expectorated in large quantities, and on examination of a smear showed fusiform bacilli and spirochetes. A diagnosis of lung abscess was made, which was confirmed by x-ray which showed an abscess involving the left infraclavicular area and apex with a large central cavity. Although the immediate cause of this complication is probably aspiration in the course of nasal tube feeding, the urgent necessity of frequent feedings to prevent untoward reactions from treatment places this complication within the group of hazards to be considered in insulin shock treatment of the schizophrenia.

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THE HYPOTENSIVE PROPERTIES OF ALLIUM SATIVUM

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Allium sativum or garlic has been used for many centuries both as a food and medicament. Hippocrates recommended garlic in infectious diseases and Pliny and Galen used it quite extensively. Dioscorides and Sammonicus used garlic as a vermifuge and it is still considered as one even today.

The present study is concerned with the hypotensive properties of allium sativum or garlic. Loeper and Debray[1] found that when the tincture of garlic was given by mouth in small doses of not more than 25 drops, it caused a definite drop in blood pressure. This hypotensive action was most marked in cases with a high initial blood pressure. The systolic blood pressure was reduced to a greater degree than the diastolic. The fall in blood pressure began usually in about thirty to forty-five minutes after taking the garlic and was maintained as long as twenty-four hours. In all cases there was a definite increase in the arterial oscillations, as shown by the oscillometer. This, the authors noted, was a usual concomitant phenomenon with drugs that have an effective hypotensive action.

Loeper, Debray and Pouillard[2] in further studies of the hypotensive action of allium sativum found that with small doses of garlic the blood pressure fell 20 mm or more about an hour after ingestion, and remained at that level for 24 hours. Another dose in 24 hours caused a further fall of a lesser degree.

Pouillard[3] reported a study of the hypotensive action of garlic in patients with hypertension in which he reported a fall in blood pressure accompaned by an increase in the oscillometric index, with slowing of the pulse, regularization of cardiac rhythm and increase of the strength and amplitude of the cardiac contractions.

In a series of patients with advanced arterial changes and high blood pressure, Schlesinger[4] found that under garlic therapy there was a fall in blood pressure as well as improvement in subjective symptoms. The blood pressure fell gradually in most cases (from 5 to 25 mm). It was usually maintained at the lowest level, even during intervals between treatments.

The present series consisted of twenty-five

cases of essential hypertension. The medication used was allimin (Van Patten), an essence of garlic and parsley in tablet form.

Case 1. J. M., age 47; male; B.P. 160/100. Attacks of vertigo and headaches. Appetite poor. No arteriosclerotic changes. Urine showed no kidney pathology. Heart essentially negative. Medication consisted of allimin tablets, 2 with water three time a day after meals. This was continued for three days, omitted on the fourth, resumed for another three days. Was under observation for two weeks. Blood pressure readings were taken every third day. Final reading was 140/90. There was also definite symptomatic improvement, headaches having disappeared and attacks of vertigo less severe.

Case 2. W. C., age 52; male; B.P. 220/110. Suffered from severe headaches and attacks of dizziness. Palpable arteries showed arteriosclerotic changes. Systolic murmur. Kidneys essentially normal. Medication was with allimin, as outlined above. Final reading was 180/100. Headaches less severe, but still suffered from occasional attacks of vertigo.

Case 3. P. F., age 59; female; B.P. 200/120. Attacks of vertigo and headaches. Some arteriosclerotic changes. Heart enlarged, systolic murmur. Urine showed some casts and albumin. Medication with allimin. Under observation two weeks. Final reading, 180/110. Headaches and dizziness less severe. Patient felt more comfortable.

Case 4. I. E., age 48; female; B.P. 180/90. Attacks of headaches and vertigo, vision blurred. Some slight arteriosclerotic changes. Heart somewhat enlarged, otherwise negative. Kidneys essentially negative. Medication with allimin. Under observation two weeks. Final reading 160/80. Improvement in symptomatic condition.

Case 5. A. R., age 64; male; B.P. 240/120. Severe attacks of headache and vertigo. Definite arteriosclerotic changes in palpable arteries. Heart enlarged, systolic murmur. Urine showed some albumin and a few casts. Medication with allimin; under observation for two weeks. The final reading was 190/100. The headaches were less severe in character and vertigo was much less pronounced.

Case 6. G. C. W., age 42; male; B.P. 160/90. Occasional attacks of headache and dizziness. Palpable arteries not sclerotic. Heart and kidneys essentially normal. Medication with allimin for a period of two weeks. Final reading was 140/90. Headaches and dizziness were relieved.

Case 7. Y. C., age 65; female; B.P. 240/120. Very severe headaches and vertigo. Arteriosclerosis of palpable arteries. Heart considerably enlarged. Four plus albumin and numerous casts in urine. Medication with allimin for a period of two weeks. Final reading 240/110. Headaches and vertigo persisted. Condition essentially unchanged.

Case 8. H. R., age 53; male; B.P. 160/100. Occasional attacks of vertigo and headache. No arteriosclerotic changes. Heart and kidneys essentially negative. Medication consisted of allimin. Under observation for two weeks. Final reading B.P. 140/80. Headaches and vertigo gone.

Case 9. B. S. N., age 59; female; B.P. 200/120. Vision blurred. Frequent attacks of vertigo and headache. Arteriosclerotic changes in palpable arteries. Heart somewhat enlarged, systolic murmur. Some albumin in urine, no casts. Was treated with allimin for a period of two weeks. Final reading 180/90. Considerable improvement in subjective symptoms.

Case 10. J. W., age 62; male; B.P. 160/90. Occasional attacks of headache and vertigo. No arteriosclerotic changes. Heart somewhat enlarged. Kidneys essentially negative. Was treated with allimin for a period of two weeks. Final reading was 160/90. Definite improvement in subjective symptoms.

Case 11. H. A., age 67; female; B.P. 260/120. Vision poor. Severe attacks of headache and vertigo. Definite sclerotic changes in palpable arteries. Heart considerable enlarged, systolic murmur, disturbed rhythmic sequence. Urine revealed four plus, albumin and numerous casts. Edema of legs. Was under treatment with allimin for two weeks. Final reading 260/120. No improvement noted.

Case 12. R. B., age 42; male; B.P. 160/90. Occasional attacks of headache and vertigo. No arterial sclerotic changes. Heart and kidneys essentially negative. Was under treatment with allimin for two weeks. Final reading was 135/80. Headaches and dizziness gone.

Case 13. J. S. A., age 54; male; B.P. 180/100. Occasional headaches but no vertigo. Heart somewhat enlarged. Kidneys essentially negative. Was under allimin medication for two weeks. Final reading was 150/90. Headaches cleared up.

Case 14. B. D., age 47; female; B.P. 190/110. Occasional headaches and attacks of vertigo. No arteriosclerotic changes. Heart and kidneys essentially negative. Was under treatment with allimin for two weeks. Final reading was 160/100. Considerable improvement in subjective symptoms.

Case 15. G. G., age 52; male; B.P. 200/120. Headaches severe, frequent attacks of vertigo. No arteriosclerotic changes. Systolic murmur with some enlargement of the heart. A few casts in urine. Was under treatment with allimin for two weeks. Final reading was 175/100. Headaches cleared up and only occasional slight vertigo attacks.

Case 16. T. G., age 64; female; B.P. 210/100. Vision blurred, palpitation of heart, headaches and attacks of vertigo. Heart enlarged, systolic murmur. Some pus in urine and a few casts. Was under treatment with allimin for two weeks. Final reading was 180/80. There was considerable improvement in the patient's subjective symptoms. Headaches gone and vertigo very infrequent.

Case 17. L. L., age 48; male; B.P. 180/100. Rather frequent headaches and attacks of vertigo. Some blurring of vision. Heart somewhat enlarged with a slight systolic murmur. Kidneys essentially negative. Was under treatment with allimin for two weeks. Final reading was 150/80. Considerable improvement in subjective symptoms.

Case 18. A. H., age 69; female; B. P. 260/120. Frequent attacks of headache and vertigo. Vision very poor. Marked arteriosclerotic changes in all palpable arteries. Heart considerably enlarged, loud systolic murmur. Urine revealed numerous casts and four plus albumin. Edema of legs and abdomen. Was under observation and treatment with allimin for two weeks. Final reading 260/120. No improvement noted.

Case 19. M. D. H., age 42; male; B.P. 160/100. Attacks of headache and vertigo occasionally. No arteriosclerosis noted. Heart and kidneys essentially negative. Was under treatment with allimin for two weeks. Final reading was 135/80. Considerable improvement in clinical condition.

Case 20. I. C., age 54; male; B. P. 190/120. Rather frequent attacks of dizziness. Headaches severe. Slight sclerotic changes in palpable arteries. Heart and kidneys essentially negative. Was under medication with allimin for two weeks. Final reading was 160/100. Considerable improvement in subjective symptoms.

Case 21. O. H., age 59; female; B.P. 160/100. Occasional attacks of vertigo. Headaches. Some blurring of vision. Heart somewhat enlarged. No sclerotic changes. Kidneys essentially negative. Was under treatment with allimin for two weeks. Final reading was 140/80. There was considerable improvement in patient's subjective condition.

Case 22. K. A., age 62; female; B.P. 190/120. Severe headaches and rather frequent attacks of vertigo. Heart enlarged, systolic murmur. A few casts in urine and some albumin. Some sclerotic changes in palpable arteries. Was under treatment with allimin for a period of two weeks. Final reading was 160/100. Definite clinical improvement in general condition.

Case 23. N. K., age 49; male; B.P. 160/90. Occasional attacks of headache and vertigo, some blurring of vision. Heart and kidneys essentially negative. No arteriosclerotic changes noted. Was under treatment wit hallimin for two weeks. Final reading was 135/80. Considerable improvement in subjective symptoms.

Case 24. D. A., age 62; female; B.P. 220/120. Frequent attacks of severe headaches and dizzy spells. Heart considerably enlarged, systolic murmur, disturbed rhythm. Urine showed a few casts and some albumin. Definite sclerotic changes in palpable arteries. Was under treatment with allimin for two weeks. Final reading was 180/90. Considerable improvement in symptoms.

Case 25. W. H. T., age 43; male; B.P. 180/100. Occasional attacks of headache and vertigo. No sclerotic changes of palpable arteries. Heart and kidneys essentially negative. Was under treatment with allimin for a period of two weeks. Final reading was 150/80. Considerable improvement in patient's subjective symptoms.

Summary. A series of 25 cases of hypertension were treated with allimin (Van Patten), a preparation containing essence of garlic and parsley. These patients were under treatment for a period of two weeks, the dose being 2 tablets of allimin three times daily after meals for three-day periods, skipping the fourth day. No other medication was used.

In all but three cases of this series there was a drop in both systolic and diastolic blood pressure. The maximum average was a drop of 20 mm, which confirms the results of Loeper, Debray, Pouillard and others.

There was considerable improvement in subjective symptoms in the majority of patients treated. Headache and dizziness were either entirely relieved or considerably lessened.

There were no changes in the condition of the heart or kidneys when these showed definite pathological changes. When arteriosclerosis was part of the picture there was no change in the arteriosclerosis, although the blood pressure was reduced.

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SOME OBSERVATIONS ON CANCER, IRRADIATION REACTION AND RADIOSENSITIVITY

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Important contributions by statisticians, surgical pathologists, biologists, radiologists, clinicians and surgeons have stimulated our hopes as to the control of cancer. A study of these contributions reveals the complexity of the subject and the necessity of cooperative teamwork in the practical application of our present knowledge, even though the primary cause of malignant disease is as yet unknown. Thousands of lives could be saved yearly by the prompt cooperative efforts of those in our profession who are called upon to advise or treat patients with potential or actual cancer. Since we are all engaged in the business of saving human life, serious and difficult as it is, we are urged to consider all phases of data already at hand, and apply our

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knowledge promptly and courageously at every opportunity. David Starr Jordan once said, "The greatest wisdom is to know exactly what is the best thing to do next, and the greatest virtue is to waste no time in doing it."

Two different aspects of the etiology of cancer have been revealed[1]; the proximate cause, or cellular changes when the cell becomes malignant, and the remote causes, or those factors which produce this cellular change.

We definitely know some of the remote causes of human cancer. We know that the incidence of cancer increases with advancing age, and that the carcinogenic agent probably acts over a long period of time, associated in most instances with protracted irritation of tissue by some extraneous agent. We know that cancer is a disease of multicellular organisms, not limited as to geography, climate, race or species, although variations in organ incidence do occur. We know that cancer statistics show a rising mortality curve, more marked in the male,[2] and being influenced by increasing longevity and improved technique or diagnosis. We know that the incidence of cure is greater and the mortality rate is declining in the more readily accessible neoplasms. The remote causes of occupational cancer have been identified and this form is now preventable. Cancer of the skin and mouth are far more common in the male. Cancers of all exposed sites are more common among the lower social classes.[1] This fact has led to the term "social cancer," which arises from chronic irritation, general living conditions, and habits of life associated with filth, infection—notably lues—as well as chemical and mechanical trauma or other physical agents. W. Cramer[1] has shown the incidence of gastric cancer increasing as one descends the social scale, as shown in Chart

Chart 1

SHARE OF GASTRIC CANCER IN TOTAL MORTALITY FOR DIFFERENT OCCUPATIONS, MALES, BAVARIA, 1924-1928
(W. Cramer)

Social Class	Description of Occupation	Stomach Per Cent	Absolute No. Cases
I	Merchants, high officials, lawyers, doctors	38.8	2,084
II	Office workers	40.1	970
III	Publicans, brewers, small officials	48.5	2,140
IV	Skilled workmen	56.8	4,247
V	Unskilled workmen	63.4	2,423
VI	Agriculture	68.5	6,907

No. 1. The upper classes are avoiding in some measure the remote causes; this fact modifies the incidence of internal cancer of exposed sites, which may thus become preventable.

Hereditary susceptibility to cancer exists and is greater for women than men, the significance varying for different sites. We cannot, however, arbitrarily condemn the offspring of any cancerous patient.

A number of chemical agents can produce tumor growth in laboratory animals. Certain compounds produce certain tumors of certain tissues. However, how these compounds act, what is necessary in the tissues, and whether cancer in man is the same as in experimental animals, is unknown. The biochemical test for carcinogens in tumor production is negative, as the agent may be applied and the tumor form much later without the compound being present at the time of its formation. Analysis does not reveal the carcinogen in the growth or its metastases.

Tissue changes may be produced by hormones such as oestrone, testesterone and progesterone. Oestrone has produced hypertrophy, hyperplasia and neoplasia in the uterus, ovaries and breasts of rats. Ovarian hormones seem to favor the growth of breast cancer in man. Secretions from spleen, thyroid, thymus, adrenals and other tissues seem antagonistic to the growth of malignant tumors. There is no published work indicating that such extracts will eradicate carcinoma.

Attempts to produce mutations in tissue cultures grown by Gey's method are being watched with interest.

The gamma rays of earth and cosmic radiations are carcinogens. However, it has been shown[3] that these agents as occurring in natural radiations are at least one thousand times too weak to excite mutations.

Irradiation Reaction. By studying tumors undergoing irradiation the types of cells which are susceptible and how they change under irradiation has been shown. Our knowledge of irradiation reaction and radiosensitivity depends upon these observed changes. Such knowledge is essential in the present day treatment of neoplastic diseases.

Tumor cells subjected to irradiation show variations in mitoses and inhibitions of metabolic activity.[4, 5] The nucleus may be the special point

of injury to the cell,[6] and hyperchromatism, pyknosis, shrinkage, karyorrhexis and disintegration occur. The cytoplasm becomes hydropic. Smaller vessels undergo necrosis of the walls with resulting hemorrhage, and the larger vessels a slower obliterative endarteritis with embolism and infarction. Hyalinization occurs, and there is clasmatocytic activity with connective tissue proliferation. Lymphocytic infiltration is an important feature. Autolytic ferments may be formed from cellular disintegration and serum activity, and plasma cell infiltration of intercellular spaces is prominent. The permeability of vessel walls and cell membranes is increased, with changes in diffusion between blood and tissues, oxidative and nutritional disturbances.[7] The bed of the tumor reacts with vascular obliteration and connective tissue proliferation. Thus the caustic and ionizing action of irradiation causes a complex bio-chemical reaction in the tissues.

Repair After Irradiation. Tissue repair after irradiation takes place by physiological processes similar to repair under other conditions. The mobilization of lymphocytes and plasma cell activity may be antagonistic to the cancer process.[8, 9] Connective tissue proliferation may be active and areas of cell destruction may be replaced by indolent connective tissue with little blood supply. This often occurs after repeated irradiation. Nests of viable tumor cells may remain secluded. Such process is known as "abortive fibrosis."

Certain phases of repair after irradiation differ from the usual repair mechanism. These bear on radionecrosis which results from the caustic action of irradiation on tissues within the zone of its activity. The destruction of muscle and the formation of sclerotic foci results in functional impotence of the muscle. In smaller vessels the parietal elements may be destroyed producing thrombosis. Necrosis of the walls of larger vessels with circulation persisting may result in perforation and serious hemorrhage. Destroyed nerves have slight tendency to regenerate. The elements of bone having high atomic weight are easily injured, the haversian systems destroyed resulting in necrosis and slough. Necrosis of walls of hollow viscera results in perforation. Secondary infection may be severe as bacteria find soil for prolific growth. Nests of viable tumor cells may be suspended in fibrosis with associated disturbances of circulation and diminished resistance to cold, trauma and bacterial infection. Such a reaction may result in late radionecrosis.

Proper filtration is the best guard against radionecrosis. More certain destruction of tumor cells is accomplished by the caustic action of unfiltered rays. Yet a tumor is rarely of uniform contour and therefore the rays must penetrate healthy tissue if they reach outlying tumor cells. If caustic action is desired there are many caustics, radioactive caustic being the most expensive, dangerous and difficult to control. There is no reason to prefer it to others.[10]

Radiosensitivity. Radiosensitivity is "that combination of circumstances resident within the tumor or host which permits marked or total regression under doses of irradiation sufficiently small to preserve the integrity of the tissues of the host."[11]

We wish to discuss the circumstances permitting regression. However, an analysis of the definition with regard to other factors will first clear up misunderstandings which exist regarding radiosensitivity.

Marked regression in mass of tumor tissue constitutes a sensitive response. Such response may be extremely active—so active as to threaten the patient's life. Such a reaction may occur from the absorption of necrotic, hemorrhagic and liquefied tissues in certain thymoma, or from the spleen of myelogenous leukemia treated by irradiation. In such instances the spectacular regressive response does not result in permanent regression or cure. In other instances the response may be slow and progressive with gradual atrophy over days and months. Complete clinical regression may occur. Such regression does not imply histologic regression or cure however, as frequently after such results histologic studies reveal islands of viable tumor cells the future of which may not easily be prognosticated. Therefore radiosensitivity does not imply or indicate the probability of cure by irradiation.[11]

Nor does knowing that a certain tumor is relatively resistant indicate that irradiation may not be efficacious in attack. Some such tumors may be clinically cured by irradiation. In such instances, however, as in certain tumors of the hypopharyngeal group, it is often necessary to submit the tissues of the host to irradiation damage which may result in functional defect

or tronblesome complications. In other instances highly caustic irradiation may be required to produce clinical regression; such irradiation would not be necessary except for resistant lesions. Therefore, the fact that a tumor regresses under irradiation does not mean that it is radiosensitive.

The term radiosensitivity should not be confused with an histologic grade of malignancy, as many other important factors determine the result of response to irradiation.

The term radiosensitive is relative.[11] If one says a carcinoma of the breast is sensitive, one implies its sensitivity according to the scale of behavior of breast tumors and not according to the scale one applies to lymphosarcoma.

Those factors in the tumor and host which control reaction to irradiation determine radiosensitivity, the more important being listed in Chart No. 2.

Chart 2

General Condition of Patient or Vitality Host
- Anemia
- Cachexia
- Age
- Heredity
- Infection

Fundamental Nature of Tumor
- Histogenesis
- Embryogenesis
- Rate Metabolism or Cycle Tumor Cell
 - General Physiology Tumor Cell
- Grade of Malignancy
 - Cell Differentiation and Arrangement
 - Number and Character Mitoses
 - (Vulnerability of Mitoses)
 - Inherent Differences in Individual Cell Population
- Lymphocytic Infiltration
- Fibrosis
- Hyalinization
- Presence of Secretin, Mucin, Keratin
- Vascularity of Tumor

Nature of Bed of Tumor
- Vascularity
- Fibrosis
- Bone
- Cartilage
- Fat
- Infection

Presence of Active Infection in Tumor

Previous Irradiation
- Adequate (Radium Fast)
- Inadequate

Amount of Infiltration or Direction and Degree of Spread
- Regional and Deep Metastases

Biologic Sensibilization (Endocrine)

The vitality of the patient plays an important part and may determine the response to irradiation. Younger subjects in good health usually yield promptly the anticipated result. In the aging host with poor circulation, anemia, cachexia or debilitating disease tumors may fail entirely to respond. Hereditary factors or general infection may lower vitality to impede or obstruct response. Often when the foregoing factors are present treatment makes the patient worse and the tumor is not affected. In many instances blood transfusions are advantageous and at all times a sound clinical point of view must govern treatment.

The radiosensitivity of a tumor varies with the fundamental nature of the tissue of origin and this factor outweighs all other considerations in estimating sensitivity. Various normal tissues react differently to irradiation, each having its "specific sensitiveness." The difference in response in tumors is comparable to the difference in response of normal tissues.[12] This selective action of rays is "a dominant fact of radiology, and deserves to be recognized as a law" and apparently is related to the life cycle and general physiology of the different cells.

The degree of sensitivity of a tissue or tumor cannot be calculated with mathematical accuracy, therefore tables are misleading and specious, suggesting only a relative estimate and containing no accurate measurement. Chart No. 3 has been compiled from Desjardins' estimation of the relative sensitivity of normal tissues.

Chart 3

COMPARATIVE RADIOSENSITIVITY OF NORMAL TISSUE CELLS

(As Estimated by Desjardins)

Type Cells	Sensitivity*
Lymphoid	+ + + +
Polymorphonuclear and Eosinophilic Leukocytes	+ + +
Basal Epithelium of Salivary Glands and Certain Other Secretory Glands	+ + +
Basal Epithelium of Testis (Spermatogonia Cells)	+ +
Epithelium of Ovary (Follicular Epithelium and Ova)	+ +
Connective Tissue Cells (Young)	+ +
Basal Epithelium of Skin, Mucous Membranes, Gastro intestinal (Stomach and Small Bowel)	+
Endothelium of Blood Vessels	+
Endothelium of Pleura	+
Endothelium of Peritoneum	+
Alveolar Epithelium of Lungs	—
Alveolar Epithelium of Bile Ducts of Liver	—
Muscle	—
Epithelium of Tubules of Kidneys	—
Connective Tissue Cells	— —
Bone	— — —
Nerve	— — — —

*
+ + + + Extremely Sensitive
+ + + Highly Sensitive
+ + Sensitive
+ Relatively Sensitive
— Comparatively Resistant
— — Resistant
— — — Highly Resistant
— — — Most Resistant

Lymphocytes have the shortest metabolic cycle and prove most sensitive; nerve cells have the longest life cycle and prove most resistant.

According to Ewing[8] the general physiology of the cells largely determines the reaction to irradiation without regard to other factors such as anaplasia or embryonic origin. Loose structure and active cell metabolism as in lymphoid tumors tend to produce sensitivity. Orderly glandular arrangement, fibrous tissue production, and mucous barriers to irradiation as in adenomas and adenocarcinomas, reduce sensitivity. Keratinization as in epidermoid carcinomas and the intercellular tissue occurring in osteogenic and neurogenic sarcomas produce resistance.

The metabolic cycle of embryonic cells being short, the greater the display of embryonal quality the more sensitive the tumor. The delicate vascular supply and failure to produce fibrous tissue increase the sensitivity of embryonal tumors also. This failure to produce abortive fibrous tissue reaction, coupled with the presence of viable cell nests in rapidly regressing degenerating tumor mass, may explain the almost universal recurrence of these tumors after irradiation regression. The high embryonal quality of embryomas of the testis and ovary, and of Wilm's tumor of the nephritic anlage (embryonic adenomyosarcoma) is associated with very high radiosensitivity. The embryonal adenocarcinoma or seminoma of the testis is sensitive, reacting in proportion to the relative amount of spermatogonia cells.[12] Mixed or teratoid tumors are usually resistant but may contain considerable spermatogonial epithelium and react in proportion.

Recent cooperative efforts of pathologists to devise a uniform system of classification of histologic grade of malignancy are meritorious. One cannot overrate the advantages of a histologic study of the basic structure, degree of anaplasia and number and character of mitoses. The prognosis and management of any tumor should not be undertaken without knowledge gained by such a study.

Broders[13] studied epidermoid carcinoma, placing neoplasms, in which the type cell is undergoing the most advanced differentiation, which is therefore the least malignant, in Group I. Those showing the least differentiation, the most malignant, in Group IV. Chart No. 4 shows a graphic representation of this classification and the relationship between cell differentiation and postoperative life, therefore prognosis.

Chart 4

GRADATION* OF SQUAMOUS CELL EPITHELIOMA OF THE LIP

(Broders) 537 Cases

*Graded by Differentiation of the Malignant Cells

	Grade I	Grade II	Grade III	Grade IV
	D\| / D\|D	\| / D\|D	\| / D\|	\| / \|
	¾D	½D	¼D	OD
Occurrence	15.82%	62.01%	21.04%	1.11%
Deaths	0.00%	52.90%	84.21%	100.00%

Quantity of differentiation plays a role in postoperative longevity. It is not the only factor however.

MacCarty[14] has studied the relationship of lymph node involvement and length of postoperative life to the histologic characteristics of tumors of the breast, rectum and skin. With observations based upon four factors: cellular differentiation, lymphocytic infiltration, fibrosis and hyalinization he found the combination of factors of more prognostic value than any single factor. Chart No. 5 shows the percentage increase in postoperative life in relationship to these factors.

Chart 5

PERCENTAGE INCREASE IN POST-OPERATIVE LIFE

(MacCarty)

(D) Differentiation of the malignant cells
(L) Lymphocytic infiltration surrounding the malignant cells
(F) Fibrosis in relation to the malignant cells
(H) Hyalinization in relation to the malignant cells

Breast	Rectum	Skin	Average
LDFH 189	LDFH 281	LDFH 723	LDFH 402
DH 96	DH 196	LF 376	LF 169
DF 95	DL 123	DF 214	DH 168
LF 92	FH 82	DL 211	DL 129
HL 64	LH 77	DH 127	DF 115
DL 54	H 61	F 121	LH 66
D 54	D 42	D 94	D 63
FH 49	LF 41	FH 60	FH 63
F 45	DF 37	H ?	F 61
H 27	F 19	LH 58	H 29
L 1	L 19	L 43	L 21

Evans in 1920 first called attention to the importance of mitosis count in the determination of the grade of malignancy. More recently Casey[15] has determined the number of mitoses counted per one thousand tumor cells, which he terms the coefficient of mitosis. He finds the same coefficient in biopsies of the primary growth, metastases and recurrences. Malignant epithelial and non-epithelial tumors show a coefficient of more than 4, benign growths a coefficient less than 4. He has shown a relationship between prognosis and the coefficient of mitosis of biopsy.

Radiosensitivity increases with increasing anaplasia, and disregarding other factors, the

higher the grade of malignancy the greater the sensitivity. Yet not all anaplastic tumors are sensitive; some are resistant. The significance of anaplasia in determining sensitivity varies with the fundamental nature of the tumor. However, the grade of malignancy bears a direct relationship to the tendency for extension and metastasis, and in group prognosis is of great value.

In certain tumors undergoing regression after irradiation the presence of viable cells or cell islets cannot be correlated with any demonstrable vascular or connective tissue changes surrounding them. These cells must retain their viability because of inherent differences in metabolic activity as compared to the more sensitive cells in the same tumor.[19, 20]

Connective tissue proliferation within the growth (before irradiation) or the desmoplastic character decreases radiosensitivity. Ewing[8] believes this the most important factor rendering tumors resistant. Whether the resistant quality is due to the desmoplasia, or whether the desmoplasia slows the growth activity and metabolic cycle of the cells is problematical.

Highly vascular tumors are relatively more sensitive, and tumor cell necrosis often results from irradiation vascular changes, which have been described. Pullinger[16] has stated that all effects following irradiation are related to vascular "stimulation" and vascular degeneration. The vascularity of the bed is important as active circulation in the tumor is essential to irradiation response. Vasoligation prior to irradiation diminishes its effect. Ischemia resulting from irradiation is part of the response, but ischemia prior to irradiation negates the response to it.[17]

The presence of active infection in the tumor or in the tumor bed interferes with successful irradiation. Treatment aggravates the infection and the tumor cells seem to proliferate more readily. Tumors in syphilitic hosts respond if hosts are under treatment, the permanence of response is unaffected, but injuries to the host tissues by irradiation are more frequent.[18]

Bone, cartilage and fibrous tissue constitute a poor bed for irradiation. Fat breaks down, saponifies and forms a barrier to irradiation. Connective response is poor in a fatty bed.

The presence of tumor cells in lymph nodes may increase or decrease the sensitivity. According to Ewing lymphocytes may be antagonistic to tumor cells, yet they are also radiosensitive and easily destroyed by irradiation. The capsules of certain nodes as in the axilla are poorly developed and readily traversed by tumor cells.

Ewing has graphically shown the relative importance of some of the foregoing factors in radiosensitivity (Chart No. 6).[8]

Chart 6

APPROXIMATE ESTIMATE OF RADIOSENSITIVITY

(Ewing)

Embryonal	Slight +20	Marked +40	Pronounced +50
Anaplasia	Slight +10	Marked +15	Pronounced +20
Lymphoma	Simple +10	Recticulum cell sarcoma +15	Atypical +20
Epidermoid carcinoma	Adult —10	Transitional basal-cell —0	Lympho-epithelioma +20
Glandular carcinoma	Adenoma —10	Adeno-carcinoma —5	Carcinoma —0
Desmoplastic quality	Slight —10	Marked —15	Pronounced —20
Neurogenic sarcoma	Fibro- —30	Cellular —0	Atypical +10
Osteogenic sarcoma	Bone formers —30	Periosteal fibrosarcoma —5	Cellular vascular types —0
Bed of tumor	Bone scar —40	Normal 0	Lymph nodes +5
Condition of patient	Normal 0	Anemic —10	Cachectic —40

Previous irradiation always increases resistance by lessening the metabolic activity of the tumor cells, producing fibrous tissue and ischemia within the tumor and bed until the tumor becomes "radium fast" with repeated exposures.

The relationship of certain hormones to neoplasms has been mentioned. Such biologic factors may influence irradiation reactions. The effect of castration on uterine myomata is well known. Irradiation of the pituitary and ovaries sometimes increases the sensitivity of breast tumors and their metastases and causes their regression. Removal of malignant serous and papillary cystoma of the ovary has caused regression of diffuse metastases of the peritoneum. Irradiation of thyroid carcinoma has caused regression of widespread metastases without further treatment.

There are factors which interfere with irradiation by preventing the delivery of proper dosage to the tumor tissue. Some of these have already been mentioned. These are the so-called barriers to irradiation, some of which are listed in Chart No. 7.

Chart 7

SOME BARRIERS TO IRRADIATION

Sensitive Surroundings
Depth of lesion
Contour, size and direction of growth of lesion
Barriers in lesion, lesion bed, or surroundings as fat, cartilage, bone, keratin, mucin, secretin, fibrosis, hyalinization, exudates
Proximity to vital structures—large vessels, viscus, meninges
Foreign body interference as Artificial dentures (secondary radiation)

Chart No. 8 shows an approximate estimate of the sensitivity of tumors of different histologic types and locations, and is compiled from the work of Stewart[11] and others.

Desjardins[21] in discussing the radiosensitivity of tumors has emphasized the importance of considering the quality of ray and scheme of irradiation. He believes these factors as important as the dosage in estimating the sensitiveness of tumor cells. He has defined the radiosensitiveness as "the relative susceptibility of normal or pathological cells, or of tumors derived from such cells, to a given dose of roentgen rays or radium, when exposed according to a comparable scheme of irradiation." He believes that the other combined factors influencing radiosensitiveness with the exception of secondary infection of the tumor, of less importance than the natural radiosensitiveness of the different types of cells. This may be true as a general rule, yet in certain instances the desmoplastic state and other factors within the tumor combine to give wide variations in reaction to irradiation in tumors of the same fundamental nature, and all factors should be carefully considered.

With consideration of the fundamental nature of the origin of tumors, Desjardins has graded tumors according to their relative radiosensitiveness compared to the radiosensitiveness of normal skin as shown in Chart No. 9.

Chart 9

RELATIVE RADIOSENSITIVITY OF TUMORS

(DESJARDINS)

Radiosensitive Tumors

(Sensitiveness greater than that of skin)

Group
1 Lymphoblastoma Lymphosarcoma, Hodgkin's Disease
Lymphoepithelioma
Diffuse endothelioma (Ewing) or Endothelial myeloma (Kolodny) of bone
2 Embryonal carcinoma (seminoma) of testis (spermatogonial cells)
Embryonal carcinoma of ovary (follicular epithelium)
3 Giant cell tumor of bone
Wilm's tumor of kidney
Multiple myeloma of bone
Basal cell epithelioma
Transitional cell epithelioma
Mucoid carcinoma of intestinal tract (mucous secreting epithelial cells)
Hemangioma
Hemangio endothelioma

Moderately Radiosensitive Tumors

(Sensitiveness approximates that of skin)

Group
1 Carcinoma of uterine cervix
Carcinoma (not adenocarcinoma) of thyroid
2 Epithelioma of tonsil and pharynx
Carcinoma of breast
Epithelioma of bronchus
Epithelioma of lip and eyelids
Epithelioma of mouth and tongue
Epithelioma (squamous cell) of skin
Carcinoma of rectum
Chondrosarcoma of bone

Radioresistant Tumors

(Sensitiveness less than that of skin)

Fibromyoma (uterus) direct irradiation
Fibrosarcoma
Carcinoma of esophagus and stomach
Adenocarcinoma anywhere, with possible exception of uterine cervix
Mixed tumor of parotid gland
Hypernephroma
Sarcoma of bone, osteogenic
Melano epithelioma and non-melanotic melano epithelioma of skin
True teratoma
Neurofibroma
Fibroma
Chondroma
Lipoma
Myxoma
Myxosarcoma

Comparative Radiosensitiveness Epithelial Tumors

Group
1 Lympho epithelioma
2 Mucoid carcinoma of intestine
Carcinoma of uterine cervix
Carcinoma (not adenocarcinoma) of thyroid
Basal cell epithelioma of skin
3 Transitional cell carcinoma
Epithelioma of tonsil and pharynx
Epithelioma of bronchus
Epithelioma of lips and eyelids
Epithelioma of mouth and tongue
Carcinoma of bladder
Carcinoma of breast
Carcinoma of anus, rectum, penis and vulva
4 Carcinoma of esophagus and stomach
5 Adenocarcinoma anywhere, with possible exception of uterine cervix
6 Melano epithelioma and non-melanotic melano epithelioma of skin

Chart 10

FACTORS IN DIAGNOSIS, PROGNOSIS AND TREATMENT (ACCESSIBLE NEOPLASMS)

Tumor
Type and histologic grade
Anatomic location
Extension, "direction" and fixation
Size and duration
Presence or absence of lymph node involvement
Previous treatment, trauma and infection
Radiosensitivity growth and bed
Patient
Age
Renal and cardiac insufficiency
Anemia
Loss of weight
Infection
Cooperation

Histologic Type and Grade of Tumor. The primary requisite in the management of any dis-

ease is diagnosis. This is true in cancer. The most valuable single accurate diagnostic aid in cancer is a microscopic one, and knowledge of the nature of the tumor is the foundation for making all decisions. Therefore we believe that biopsy—each type indicated as preoperative, excisional, operative frozen section and postoperative for checkup—is the prime requisite in diagnosis, and of extreme value in determining and controlling treatment. Wherever possible we use the electrosurgical biopsy because of its obvious advantages. The aspiration biopsy of Martin and Ellis is of value in less accessible growths. We do not agree with those who maintain that biopsy is rarely if ever necessary, and that tissue studies are of value only in postoperative and necropsy specimens. We believe that reports of results of any treatment of cancer are to be questioned unless supported by microscopic studies.

The most malignant growth is chorioepithelioma, then small round cell sarcoma, melanocarcinoma, adenocarcinoma, fibrosarcoma, squamous epithelioma, basal cell carcinoma and epulis in order.

Determination of the grade of malignancy by basic structure, degree of anaplasia, character of mitoses, lymphocytic infiltration, hyalinization fibrosis or desmoplasia is of value in determining metastatic and infiltrative tendencies especially in tumors of high and low grades. However, there is no system of grading of absolute value in prognosis of any individual case, and the summation of all factors accurately determined will tell much more than any microscopic examination.

We have already discussed the microscopic and clinical factors in determining the radiosensitivity of a tumor and its probable reaction to irradiation.

Anatomic Location of Tumor. The most reliable guides to prognosis and treatment in an individual case are indicated by careful clinical examination, and the location is probably as important as any single factor. Accessibility and proximity to vital structures are considerations of paramount importance. Cancer of the skin is least fatal; buccal, nasal and sinus carcinoma more so; followed by breast, female genitalia and rectum.

A great majority of all cancerous lesions arise in accessible sites and most of these are sufficiently localized in the early stage to be cured by proper treatment. The outcome in these cases is determined by the vigilance of the physician.

The importance of the more common precancerous lesions should be recognized by all physicians. Ulcers, fissures, erosions, cysts, polyps, papillomata and keratosis may become malignant by the continued action of remote carcinogenic agents. Deeply pigmented moles are especially dangerous. In the uterine cervix chronic infection, erosion and cystic degeneration frequently precede carcinoma. Leukoplakia of the mucous membrane of the mouth, and portio vaginalis of the cervix and of the vulva are precancerous. Malignant changes may be initiated by chronic irritation or by unsuccessful efforts to destroy the lesion by obsolete or inadequate methods such as burning or fulguration without anesthesia, acids, caustic paste and inadequate irradiation.

Accessible localized malignant lesions occur on the general skin, lip, ear, nose, buccal mucosa, tongue, vulva, and in the less accessible rectum, breast and soft tissues.

For such precancerous and accessible localized malignancies we prefer electrosurgical excision with local anesthesia by the "excisional biopsy" as the method of choice in treatment. This method has the advantages of hemostasis, protection from dissemination of cancer cells, or infection into surrounding tissues, and preserves the specimen in toto for histologic study, an advantage of more than academic importance. Incision through healthy skin to expose an underlying growth may be made by scalpel. More extensive lesions are treated by combined methods. We feel that the safety, control and uniformly good results from proper electrosurgical excision followed by routine biopsy upon all specimens give this method decided advantages over others in the treatment of precancerous and readily accessible neoplasms. There is no excuse for inadequate measures from either standpoint, diagnosis or treatment. Cosmetic factors and delayed healing time are of much less importance when efficiency as to cure is at stake.

The location of a tumor close to vital structures may modify the application of surgery and irradiation. The prognosis of cancer of the esophagus is poor because of the technical difficulties of applying either method. Cancer of the cervix is more serious than cancer of similar structure elsewhere (as in the oral cavity), but

the resistance of the bed to damage permits intensive irradiation which may not be tolerated elsewhere.

The prognosis for tumors of different areas of the same organ may vary. Cancer of the tongue is less vicious on the anterodorsal area, more so on the infralingual, and most when located on the posterodorsal area.

Tumors may occur in certain locations such as the breast and cervix, which because of the character of lymphatic drainage may make difficult the determination of degree of extension. What may seem a localized growth may already have extended imperceptibly into outlying lymphatic channels. Cutler's transillumination and duct injection of opaque media are aids in differentiating breast tumors.

Size and Duration of Growth. The importance of size varies greatly with the type of growth. Large superficial benign lesions such as basal cell epithelioma may carry a good prognosis. Everting, fungous, papillomatous growths may pile up and remain localized. The importance of the size varies with the location, and in lip cases the size of the growth is comparable with the degree of malignancy and the duration; the size may be a guide to the probable length of life. Duration of growth is of slight value in low grade growths which may exist for years as such. In more vicious types the duration is of some aid in determining the probable degree of extension.

Extension, Direction of Growth and Fixation. In the determination of prognosis in an individual case the extent of the disease outweighs all other factors. The fact that extension has occurred does not negate the possibility of cure but lessens it materially. Invasive growth, induration or infiltration about the growth and ulceration all indicate extension. Eversion or outward proliferation is less virulent than inversion or infiltrative spread. "Beware of the cancer which is going away from you" (Mayo).

Adherence to bone, cartilage, or fascia, "frozen neck or pelvis," are grave prognostic signs.

The degree to which the prognosis may be modified when extension has occurred depends upon the type and extent of growth and accessibility of the entire disease to surgery and irradiation individually or as adjuncts.

The tendency of cancer of the breast, cervix and body of the uterus to spread along draining lymphatics makes prognosis and treatment difficult in certain instances. For this reason and in order to seal the lymphatic channels and reduce the activity of the growth by vasculo-connective tissue sclerosis we favor preoperative irradiation by the divided dose technique. In the breast and corpus uteri surgery is indicated in operable cases. In the cervix what appears to be an early growth may already have spread, therefore the outlying cells and not the uterus is the point of attack. For this reason irradiation has supplanted surgery as the method of choice in the treatment.

The frequency with which we are called upon to treat disease which has become extensive following irradiation failure in radioresistant epidermoid carcinoma of the general skin, lip, buccal mucosa, anterior tongue, nose, ear and vulva has convinced us that early complete removal with histologic study should be the treatment of choice in localized growths. Widespread mutilating operations are frequently necessary for the removal of cancer and tissues damaged by irradiation. To arrest the disease in certain instances we have been compelled to perform amputations, bone resections, sequestrations, enucleations, ligations of major vessels and other major procedures which would have been avoided by early complete removal of the affected tissue in toto.

Node Involvement. The presence of node involvement is a bad prognostic sign. In surface lesions which ulcerate the involvement of glands may be more apparent than real. Inflammatory hyperplasia is difficult to distinguish from glands containing tumor cells unless the glands are quite large and obviously tumefied. For this reason reports of cure of such apparent involvement are not reliable unless controlled by microscopic studies. Glands apparently involved from radiosensitive lesions are irradiated; if involved from resistant lesions and accessible, resection is undertaken. This principle applies especially in the neck.

The presence of distant metastasis is a grave prognostic sign and such lesions are treated by irradiation for palliative effect only.

Previous Treatment, Trauma and Infection. Uncertain prognosis as to life and definitely poor prognosis as to mutilation follows maltreatment by traumatizing measures. It is hardly complimentary to our profession that temporizing and

inadequate, deleterious methods are applied in a condition in which the ultimate fate of the patient depends upon prompt and complete extirpation.

Patient. The age of the patient may modify the prognosis. "The older the patient the less virulent the growth." However, we do not feel that treatment of cancer should be denied a patient because of age alone. A procrastinating attitude expecting that the patient will succumb before extension occurs has too frequently resulted in untold agony and a "stinking death" from extensive ulceration and necrosis. All of which might have been avoided by simple early complete removal of a localized growth.

Renal and cardiac complications and anemia may be significant. At times the condition of the patient may delay or deny him appropriate treatment. Response to treatment may be inhibited by lowered vitality or infection such as untreated syphilis. Anemia related to the growth is a grave prognostic sign.

Loss of weight is more apt to be due to failure of food intake, toxemia from infection, or failure of absorption. Insomnia due to pain from infiltrating, extensive or infected lesions may cause general loss of vitality. Toxemia from viable cancer cells is questionable.

A sound clinical point of view must govern all treatment and prognostic attempts. The patient must be treated as well as the disease process. Pain should be controlled by suitable methods, keeping in mind recent advances in therapy such as improved analgesics, neurectomy, nerve injection and spinal cord injection. Irritational factors may be removed by supplementary surgical measures such as colostomy and ureteral transplantation. Gastrotomy may be necessary for nourishment or tracheotomy for respiratory obstruction.

The mental attitude of the patient must be considered as continued co-operation is essential. There is no circumstance more discouraging than the necessity to submit to many of the procedures deemed necessary by the physician in an effort to control cancer. Encouragement with sympathetic understanding is a valuable part of the physician's armamentarium and "a good prognosis to the patient and a guarded prognosis to the relatives" (Mayo) is a sound basis for approach.

CONCLUSIONS

Much practical knowledge has accumulated which aids us in the control of cancer. We should be alert to grasp accumulating information and keen in cooperative efforts to apply it.

The surgeon and radiologist must develop close teamwork with the surgical pathologist, upon whom lies the responsibility for determining the type of tumor, grade of malignancy, and probable degree of radiosensitivity.

The determination of prognosis and treatment must be developed from a thorough diagnosis, complete understanding of the nature of the tumor and its extent and a complete clinical study of the patient.

A broad clinical attitude and underlying principles of surgery and irradiation, including knowledge of reaction and radiosensitivity, must govern the type of treatment outlined.

Electrosurgical technique, because of its added protection and hemostatic effect, is particularly advantageous in treating early accessible lesions, and also in combined methods of treating more extensive disease.

Surgery, roentgen and radium radiation are adjunctive, and should be considered as such, in the treatment of more extensive lesions of the external envelope, nasal cavity and sinuses, mouth, breast, vulva, anus, rectum and body of the uterus.

Irradiation is the method of choice in certain lesions of the hypopharynx and in the uterine cervix. Certain surgical preparations for the application of irradiation may be of aid in these areas.

Observations and familiarity with end-results impress the dangers of overenthusiasm for any one specific form of treatment to the exclusion of others. Incapacitating or mutilating surgery is to be avoided in cases which respond much more readily to irradiation. On the other hand, indiscriminate use of roentgen or radium radiation in possible radioresistant tumors which may be cured by surgery is to be condemned. We believe that histological study is of primary importance in determining and controlling any type of treatment.

The value of properly controlled irradiation cannot be overestimated. Our attitude can be summed up in the broad and fair statement by Spencer and Cade: "The lay public and a number of medical men are still under complete

misapprehension as regards the practical possibilities of radium therapy. Its possibilities are exaggerated, its pitfalls underestimated, and the medical literature, as well as the lay press, offer constant examples of unreasonable claims and unjustifiable statements. It is, however, as cruel and misleading to deprecate as to exaggerate the usefulness of this very delicate weapon, which in careful hands, controlled by minds unbiased or prejudiced, 'cures' a selected few, relieves a great many, and robs no one of the benefits of excisional surgery."

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Chart 8

RADIOSENSITIVITY OF HISTOLOGIC TYPES

(Compiled from Information by Stewart)

Location	Histologic Classification	Histologic Characteristics	Sensitive	Resistant
Intra oral	Adult squamous	Differentiated		+
	Spindle cell			Extremely
Ant. floor mouth	Squamous epidermoid	Highly vascular papillomatous	Relatively not highly	
Lip	Squamous epidermoid			+
Buccal mucosa	Squamous epidermoid			+
Hypopharynx Tonsil	Squamous epidermoid	Varied differentiation		Relative
Base tongue and Soft palate	Transitional cell		Moderately to highly	
	Spindle cell		Moderately to highly	
	Lymphoepithelioma		Sensitive	+
	Adenocarcinoma			+
Metastatic nodes from		Rapid fulminating	More than 1st lesion	
		Desmoplastic development		+
		Liquefying sloughing		+
		Fascial infiltration		+
Minor	Mixed			
Salivary	Adenoid-cystic epithelioma			+
Glands	Adenocarcinoma			+
Jaw	Adamantinoma			Probably
Esophagus	Carcinoma		Discouraging	
	Epidermoid		results	
	Glandular			
of cardia			More sensitive	
Stomach	Andenocarcinoma			+
Large Bowel	Adenocarcinoma			+
Rectum	Carcinoma	Colloid	Mildly	+
	Carcinoma	Cellular, solid infiltration		
	Glandular	Papillary with hydropic embryonic cells		
	Adenoma destruens		May be Markedly variable	
Anal Canal	Epidermoid	Varied as elsewhere	Varied	Varied
Stomach	Lymphosarcoma		+	
Colon and	Leukemic lymphomas		+	
Rectum	Aleukemic lymphomas		+	

Location	Histologic Classification	Histologic Characteristics	Sensitive	Resistant
	Melanoma			+
	Myxosarcoma		?	?
	Carcinoids		?	?
Parotid and	Mixed	Epidermoid duct carcinoma		+
Submaxillary	Mixed	Adenoid-cystic carcinoma		+
Glands	Mixed	Less malignant	Apt to be	
Submaxillary		Malignant		+
Nasal Mucosa	Transitional cell		Markedly	
and Sinuses	Lymphoepithelioma		Markedly	
	Schneiderian	Anaplastic	+	
	Carcinoma	Mucoid		+
	Squamous carcinoma			+
Ethmoid	Epidermoid	Variable		+
Mastoid				+
		Embryonic anaplastic of childhood	Extremely	
	Angiofibroma or Angiosarcoma	Papillary or polypoid	May undergo slow sclerosis	
Lung	Carcinoma		Slow unsatisfactory regression	
Breast	Carcinoma		regression	
	Adenoma Malignum or Bulky	Develops in cysts	Mildly	
	Adenocarcinoma	Outside of capsules		+
	Comedo carcinoma	Confined to duct	Moderately	
		Infiltrating	Much less	
	Diffuse duct carcinoma		+	
	Other types		Unpredictable	
Axillary disease from Dermal metastases			+	Unrelated to tumor
Skeletal metastases			+	
Pulmonary metastases				+
Cervix Uteri	Epidermoid	Highly anaplastic undifferentiated cellular	Highly	
		Adult and less adult plexiform		Varied
	Adenocarcinoma			Highly
Corpis Uteri	Papillary adenoma malignum	Grade I		+
	Adenoma malignum	Grade II		+
	Adenocarcinoma	Grade III	Slightly	
	Diffuse embryonal or anaplastic carcinoma	Grade IV	Highly	
	Adenoacanthoma			+
	Myomata		(Biologic)	
	Myosarcoma		Slightly	
	Chorioepithelioma		Unknown	
Vulvar and Vaginal	Epidermoids			Variable Scant observation Probably as Epidermoids
Ovary	Diffuse embryonal carcinoma			Elsewhere
	Seminoma ovarii	Lymphoid stroma	Highly	
	Malignant Granulosa cell		+	
	Papillary Cystic	Low grade	+	
	Adenocarcinoma	High grade		+
	Retroperitoneal Mestastases			+
Kidney	Adenocarcinoma	Papillary or solid		+
	Hypernephroma			+
	Epidermoid	Papillary		Unknown
	Embryonal	Adult looking tubular renal		+
		Embryonal adenomyosarcoma (Wilms)	Extremely	
Suprarenal	Medullary carcinoma			Unknown
	Neurocytoma	Small cell	Exceedingly	
Testis	Medullary carcinoma	Adult		Unknown
	Teratoma	Adult		+
		With diffuse embryonal areas		"Pseudoresistant"
	Teratoma Complex	With squamous carcinoma		+
	Embryonal adenoma malignum or adenocarcinoma			+
	Choriocarcinoma			Relatively
	Embryonal carcinoma	Lymphoid stroma	Highly	
	Seminoma	Metastases from	Highly	
Bladder	Carcinoma			Unknown

Location	Histologic Classification	Histologic Characteristics	Sensitive	Resistant
Prostate	Carcinoma			Probably
		Bone metastases from		+
Thyroid	Papillary Adenocarcinoma	Grade I	Relatively	
		Metastases from	Relatively	
	Adenocarcinoma	Grade II	Relatively	
		Metastases from	Relatively	
	Spindle and Giant cell carcinoma	(Carcinosarcoma)		Very
	Anaplastic carcinoma	Small cell		+
Bone	Benign Giant Cell Tumors		Relatively	
		Upper femur and tibia		+
		Weight bearing bones in older people		+
		Jaw (not epulis)	Relatively	
		Cartilaginous variants at upper humerus	Relatively	
		Telangiectatic variants	Less	
		Xanthomatous variants	Relatively	
		Recurrent after curettage		+
		Infected from biopsy		+
		Growth penetrating capsule	Less so	
	Sclerosing Osteogenic Sarcoma			Extremely
	Osteogenic Chondrosarcoma			+
	Periosteal Osteogenic Sarcoma			+
	Cellular telangiectatic small cell Osteogenic Sarcoma			Less
	Telangiectatic large spindle and giant cell osteolytic Sarcoma			+
	Central spindle cell Osteogenic Myxosarcoma		May be	
	Endothelial Myeloma (Kolodny)		Highly	
	(Ewing's Tumor) Diffuse Endothelioma	Metastases from	Highly	
	Myeloma		Extremely	
	Plasmocytoma		Extremely	
	Myeloblastic Myeloma		Extremely	
	Lymphoid Myeloma		Extremely	
		Metastases from	Extremely	
	Hodgkin's Disease of		+	
	Liposarcoma		+	
	Multiple Xanthomatous of membrane bones in Christian's Syndrome		+	
Sarcoma	Neurogenic	Neurinoma		+
		Schwannoma		+
		Peripheral		+
		Perineural fibroblastoma		+
	Fascial			+
	Rhabdomyosarcoma			+
	Liposarcoma		Moderate	
		Small round cell and polyhedral cell	Very	
		Metastases from	+	
	Synovial Sarcoma		Mildly	
				Highly
Melanoma	Subcutaneous and Skin Metastases		+	
	Spidery angiectases		+	
Angioma	Port-wine naevi		Mildly	
	Hemangioma Hypertrophicum Cutis		Moderately	
	Bulky or aneurysmal Angiomas			+
	Angioendothelioma of Kaposi (multiple hemorrhagic sarcoma)			+
	Glomus (Masson's angiome neuromyarterial)			Variably
	Lymphangioma			Highly
	Squamous Epidermoid		Varied	Varied
Skin	Basal cell	Trichoepithelioma of Regaud	Relatively	
	Appendage Tumors (Geschickter)	Adenoid cell features		+
		Adenoid cystic epithelioma features		Very

Location	Histologic Classification	Histologic Characteristics	Sensitive	Resistant
		Bed of bone or cartilage		Most
Lymphoid	Lymphoma		+	
	Lymphogranuloma		+	
	Lymphosarcoma		Extremely	
		Malignant lymphocytoma	+	
		Reticulum cell lymphosarcoma	+	
	Lymphadenoma			
	(Brill-Symmes type)		Very	
Nodes	Hyperplastic of Pseudolukemia			+
	Of Lymphatic Leukemia		+	
		Mikulicz Syndrome on Leukemic		
		Basis	+	
	Hodgkin's Disease		Highly	
		Sclerosing fibrotic node changes		+
	Nodes in Myelogenous Leukemia		Very highly	
Thymoma	Lymphosarcoma or Reticulum			
	cell Sarcoma		+	
	Lymphatic Leukemia		+	
	Pseudoleukemia		+	
	Simple lymphona		+	
	Reticuloendothelial tumors			
	(Hodgkin's)		+	
	Hyperplastic Tuberculosis			
	(Sternberg Type)		+	
	Endothelioma		+	
	Small cell anaplastic			
	Carcinoma			Probably
Brain	Glioma			+
	Medulloblastoma		Slightly	
	Spongioblastoma			
	Multiforma		Very slightly	
	Astrocytoma			
	Protoplasmaticum		Slightly	
	Astroblastoma		Possibly	
	Pituitary adenoma		slightly	
	Lymphoma		Somewhat	
Orbital and	Neurosarcoma		May be	May be
Bulbar	Retroocular liposcarcoma		Slightly	+
	Melanomas			Extremely
	Neuroepithelioma of retina		+	
	Retinoblastoma		+	
	Retinal glioma		+	

STUDIES IN AUTOHEMOTHERAPY

Report of a case of Purpura Rheumatica with a new method of treatment.

LEO SAXON, M. D.

CHICAGO

Purpura rheumatica, a disease first described by Johann Lucas Schoenlein,[1] a German clinician of great renown, in 1839, is characterized by a combination of dermatological symptoms and arthritis, especially of the lower extremities. It must be differentiated from purpura hemorrhagica, or Werlhoff's disease, and from purpura simplex.

Purpura *simplex* is frequently found in children; it is a mild dermatosis, with few constitutional signs, the hemorrhagic spots appearing in crops, on the trunk and upper extremities. Purpura *rheumatica,* or Schoenlein's disease, is sudden in its onset, beginning usually with an attack of pharyngitis or tonsillitis, and is usually seen in debilitated individuals with "soft, vulnerable skin" (Schoenlein), multiple arthritis fever, and a profound degree of prostration accompanying the disease. The lesions are not purely purpuric, but mixed with urticarial elements, and nodular-erythematous ones; it is characteristic that the eruptions tend to localize themselves in the neighborhood of the affected joints. *Henoch's* type of rheumatic purpura is characterized by the presence of mucous hemorrhages and gastro-intestinal crises, attended by colic, vomiting and diarrhea; these visceral crises are of great diagnostic significance. A diagnosis of cholecystitis and appendicitis has often been erroneously made in such cases, and even an appendix removed from people suffering from Henoch's purpura.

All three above-mentioned types of purpura show no change in the amount of blood-platelets, in contradistinction to Werlhoff's disease (hemorrhagic purpura), where there is a marked decrease of the blood-platelets.

The present case is a typical one of Schoen-

lein's disease, significant in two respects, viz.: the marked severity of the constitutional symptoms, and the effectiveness of a new treatment, consisting of autohemotherapy.

The patient is a woman of 31 years, very frail, with pale skin and mucous membranes, in a very reduced nutritional condition, weighing less than 90 lbs. Significant in her history is a Neisserian infection, which occurred two years before her present illness. This infection led to a bilateral salpingitis, which was treated for six months conservatively. Pelvic examination at the time of the present illness reveals some thickening of both tubes, which, however, are not excessively tender; there is no leucorrhea, and slides from the cervix have been negative for a year.

The present complaint began with an attack of tonsillitis, lasting for one week; there was pain on swallowing, and a temperature which never exceeded 100° F. A week after the development of the sore throat, the patient's legs began to swell, and she had a severe chill. The temperature rose to 103° F. in the evening, and some slightly raised purple spots began to appear on both legs. Gradually, these spots became larger and more tender, until a week after their eruption, some of them attained the size of a silver dollar, and became deeply infiltrated and indurated. Both knes and ankles were greatly swollen, and motion in these joints was practically nil. For one week the patient experienced several severe chills a day, the tongue being heavily coated, the face pale and pinched, and the temperature rising to 104° F. and higher. The case assumed all the earmarks of a septicemia, as we find in so many cases of streptococus hemolyticus infections. The climax came, when a thorough examination of the heart revealed a soft systolic blow over all sites, and a diagnosis of acute endocarditis was made.

We, therefore, have here a characteristic picture of Schoenlein's disease, or purpura rheumatica, following an acute tonsillar infection. Most cases reported in the literature had a distinctly favorable prognosis. The development of endocarditis in this case gave it a more serious aspect.

There is no known effective treatment for Schoenlein's disease. A. Piney[2] used calcium gluconate, but it proved ineffective in this case. Salicylates, pushed to large doses (60 grains daily) were of no avail. Foreign proteins, in the form of boiled milk, were used on three different occasions; their well-known favorable effect in the control of rheumatic fever is a matter of record, but in this rheumatic purpura only a transient result was produced, inasmuch as the temperature and the swelling of the joints receded, but after ten days of treatment the toxemia and the purpuric spots remained the same, and the condition of the patient became grave. At this time resort was had to autohemotherapy.

The mechanism of autohemotherapy is still in doubt, although various theories have been advanced to explain the indubitable therapeutic results achieved in a variety of clinical conditions. The procedure consists of withdrawing varying amounts of blood from the vein and either injecting the whole blood quickly before it coagulates, into the muscles, or allowing it to stand for several hours until the serum separates from the solid particles, and then only utilizing the blood-serum. Some men have also subjected the venous blood after its withdrawal to further treatment (for example, ultra-violet irradiation) and others have re-injected the blood serum again intravenously. Where large amounts of blood are withdrawn, we are reminded of the time-honored method of "blood-letting" or "venesection," the rationale of which has been thoroughly studied, for instance, by H. Stern in 1915. The effect of this method in the *pneumonias* is gaining new support; we know that by removing the venous engorgement in the circulation of the lungs, we can prevent the development of pulmonary edema; we relieve the work of the heart, which is under a considerable stress in pneumonia, and this may be therefore a life-saving measure. The effect of venesection in *chronic bronchitis* is specifically mentioned by Osler, and several authors have advocated the use of blood-letting in desperate cases of *eclampsia*.

But in our modern method of autohemotherapy, we use smaller amounts of blood, as a rule not more than from 2 cc. to 10 cc. As Vorschutz has shown, after removal of blood, there appear in it substances that are capable of exciting the sympathetic nervous system. Therefore, this form of therapy does not act in a specific way, but it increases the "histio-cytic action" of formed elements, and augments the bactericidal power of the blood-plasma. It has been contended that it is a form of protein-shock therapy, but according to F. Schuer this idea must be discarded, as the blood, after being re-injected, is absorbed very rapidly within an hour—that is, much more quickly than with the foreign proteins.

At the present time this method has been used extensively in the management of skin diseases, and especially in psoriasis; the result in some *allergic* conditions is very gratifying, and we have seen numerous cases of *urticaria*, and some cases of *asthma* in children, yield very quickly

to small doses of autogenous blood; in psoriasis, the results are still disappointing. We must assume that the effect in these allergic cases is in the nature of a *desensitizing* process, not unlike that produced by peptone. The dosage is best maintained by using small frequently repeated amounts, because we desire to get a slowly accumulating desensitizing effect. In infectious conditions, as those of the respiratory organs, and in septic conditions, the dosage should be larger, and the intervals longer: the rationale apparently is different. Thus, in pneumonia, where the method of Tillmann[3] was used, doses as high as 100 cc. repeated at an interval of two days, has been found very effective; for most other conditions five to ten cc. are sufficient as mentioned before. In our opinion, autohemotherapy should be used much more than it has been, and the therapy of several diseases with a high mortality will be favorably influenced when this simple method will become more popular, and the basis of its use and dosage will be more thoroughly understood.

Following two injections of the patient's own blood, this case rapidly came to a successful conclusion. The infiltrated purpuric spots disappeared, leaving faint brownish pigmentations on the skin of both legs. The toxemia and temperature abated after the first injection of five cc. of the patient's blood; after four weeks, no trace of the disease remains, excepting a faint systolic murmur at the apex of the heart.

CONCLUSIONS

1. A case of purpura rheumatica or Schoenlein's disease is reported with severe constitutional signs, and the development of endocarditis.

2. A new treatment is recommended, consisting of the administration of the patient's own blood (autohemotherapy).

3. The rationale and indications of autohemotherapy are discussed.

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300 W. North Ave.

FAIR ENOUGH

Doctor: "I will examine you for ten dollars."
Patient: "Go ahead. If you find it, I'll give you half."

IS MALARIA EVER RESISTANT TO QUININE THERAPY?

Report of an Apparant Case

A. C. Scott, M. D.
EVANSVILLE, ILL.

Statements such as the following fully support the historical fact that quinine for over three hundred years has been used as a specific for malaria. Osler[1] states generally that, "In quinine we possess a specific remedy for malaria." While Bass[2] in Cecil's Text-book of Medicine is more definite: "During the past eight years the writer has not only followed the treatment of many cases but has investigated whenever possible cases that were resistant to quinine. Not a single case has been found in which symptoms persisted even for three days after administration of as much as thirty grains of quinine daily. They may exist, nevertheless, but certainly are rare." Craig[3], in addition, presents evidence as to the existence of a quinine-fast malaria being absolutely unreliable. Fletcher[4] admits that an absolute resistance to quinine is not impossible but that he has never seen a case in his wide experience. Sinton[5] failed to find a single case of quinine resistant malaria among fifteen hundred patients suffering from benign tertian malaria. And Bass[6] concluded that cinchona alkaloids, especially quinine, constitute the only specific remedy for malaria.

A thorough perusal of the literature of the American Medical Association failed to reveal a single case of malaria that did not respond to adequate doses of quinine.

An array of proof such as this should definitely settle any doubt concerning quinine as a specific remedy, nevertheless I wish to report a case of malaria which in my opinion has proved an exception.

E. L., a white male, age 26, farmer, entered the office on Aug. 7, 1937 complaining of headaches of two weeks duration. Previously he had been coughing for several nights and had had one attack of nose-bleeding. Each afternoon for two weeks he had had a slight chill and a rise in temperature.

The examination revealed P. 86, T. 102 and W. B. C. count of 6450. The rest of the examination was negative except for an enlarged and tender spleen. Blood was taken for a Widal test and malarial smears, and sent to the state laboratory. He was placed on quinine, grains 10 t. i. d. These reports showed a negative Widal and blood culture, but were positive for plasmodium vivax.

The patient returned on the morning of Aug. 10 feel-

ing better and had had no chill the previous day. His temperature was 98.2 and pulse rate 76. He returned the same afternoon with his temperature elevated to 102.6 and feeling much worse. He was given .6 gm. of neoarsphenimine intravenously and told to return the next afternoon. On Aug. 11 his temperature was still elevated to 102.6 and he was given an additional .4 gm. of neoarsphenamine.

On Aug. 13 he was seen in consultation with the State Board of Health representative. Examination showed P. 90, T. 102.2, and a W. B. C. count of 5400. There were a few rose spots on the abdomen and his spleen continued to be enlarged and tender. He was diagnosed typhoid fever, and quinine was discontinued. More blood was taken for Widal and malarial smears and sent to the state laboratory, but the reports a few days later showed a negative Widal and blood culture, while they continued positive for plasmodium vivax.

On Aug. 13 he was given atabrine 1.5 grains t. i. d. and his temperature began to show a gradual decline from day to day. Atabrine was discontinued after six and a half days due to a definite yellowish discoloration of the patient. On Aug. 18 a stool and urine specimen was sent to the state laboratory and on Aug. 23 blood for another Widal. This Widal was also negative, but a few days later the stool and urine returned positive for typhoid bacilli. On Aug. 24, 1937 his temperature became normal and did not elevate after that date. Two subsequent stool and urine specimens were negative for typhoid bacilli, and the patient was released from quarantine.

Several theories can be advanced why 30 grains of quinine sulphate for one week failed to eradicate malaria in this case. Perhaps the presence of the typhoid infection in some way prevented the quinine from acting. Deeks[7] believes the failure of quinine to cure malaria is due to lowered resistance caused by one or more chronic infections. Sinton[8] thinks that there is a variation in virulence of the malaria parasite, and this may explain the reason that my patient failed to respond to the usual doses of quinine.

A correspondent in the British Medical Journal[9] found cases that were not cured by quinine sulphate but responded to quinine hydrochloride or bi-hydrochloride. This was due to the failure of quinine sulphate being absorbed since the tests of the urine were negative for quinine. And since, too, I tried no other form of quinine except the sulphate in the case reported, it is possible that other salts might have cured him. Bass,[10] however, maintains that "no salt of quinine is more effective than the sulphate."

It is possible also that larger doses or longer medication with quinine sulphate would have effected a cure, but my patient experienced severe tinnitus and my consultant thought the patient had had sufficient medication.

SUMMARY

Quinine is regarded as a specific in the treatment of malaria. Nevertheless a case is reported in which 30 grains of quinine daily for six days and two injections of neoarsphenamine of .6 gms. and .4 gms. respectively, failed to cause a disappearance of the parasites from the peripheral blood. This may have been due to the concomitant attack of typhoid fever or the presence of an extraordinary virulent strain of malaria, or failure to use other quinine salts than the sulphate. Quinine therefore cannot *always* be relied upon to diagnose and treat unknown fevers.

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Marriages

EDWIN F. BAKER, Ashton, Ill., to Miss Mildred Louise Short of Chicago, at Tipton, Iowa, April 14.

PAUL S. HANSEN to Miss Elizabeth Coit, both of Chicago, March 26.

MILTON L. MILLER, Chicago, to Miss Bernice Saul of New York, May 6.

JULIUS B. STOKES, Pontiac, Ill., to Mrs. Georgiana Nance Donar of Kankakee, May 16.

Personals

Dr. Frederick R. Schmidt, Chicago, discussed common diseases of the skin before the Madison County Medical Society in Alton June 3.

Dr. Conrad S. Sommer, medical director, Illinois Society for Mental Hygiene, has been appointed director of the organization, succeeding Miss Helen L. Myrick, resigned.

The Macoupin County Medical Society was addressed in Carlinville May 24 by Drs. Robert

J. Crossen and Franz J. Arzt, St. Louis on gynecology and newer management of threatened abortion, respectively.

Dr. James W. Cook of the Research Institute of the Royal Cancer Hospital and professor of chemistry, University of London, delivered a lecture at Michael Reese Hospital, July 11, on "Cancer Producing Agents and Their Biological Effects."

Dr. Wilmier M. Talbert, Decatur, formerly city physician for Decatur, has been appointed health officer of a new district health unit with headquarters at Clinton. The counties of Macon, Moultrie, Dewitt, Piatt and McLean are included in the new unit.

Lydia J. Roberts, Ph.D., chairman of the department of home economics, University of Chicago, received the Borden Award for research in nutrition, at the recent annual convention of the American Home Economics Association in Pittsburgh. The award consists of a gold medal and $1,000. Dr. Roberts is a member of the Council on Foods of the American Medical Association. Amy L. Daniels, Ph.D., research professor of nutrition, Child Welfare Research Station, State University of Iowa College of Medicine, Iowa City, won the award in 1937 but the presentation was made at the recent convention.

The new officers of the Chicago Gynecological Society are: President, David A. Horner; President-Elect, Julius E. Lackner; Vice-President, Harold K. Gibson; Secretary, Edward Allen; Treasurer, George H. Gardner; Pathologist, John I. Brewer; Editor, William B. Serbin.

The new officers of the Chicago Society of Internal Medicine are: President, Louis N. Katz; Vice-President, L. C. Gatewood; Secretary-Treasurer, Clarence F. G. Brown.

News Notes

—A demonstration in the laboratory testing of blood specimens will be a feature of the annual state fair in Springfield August 13-21. A serologic laboratory will be installed in the exposition building as a part of the exhibition by the state department of health.

—The Institute of Medicine of Chicago announces that its committee on the Elizabeth McCormick Child Research Grant has at its disposal the sum of $750 to aid a qualified investigator in the Chicago area in child welfare research. Projects should in a broad sense be in the field of pediatrics, it was stated. Applications will be received up to September 15 and the award made early in the fall. Applications should be sent to Dr. John Favill, secretary of the committee, 122 South Michigan Avenue.

—A graduate course in electrocardiography will be presented at Michael Reese Hospital by Dr. Louis N. Katz, director of cardiovascular research, August 22-September 3. It is planned to individualize the course so that at the end of the period each student will be capable of taking and properly interpreting routine electrocardiograms. Additional information may be obtained from the medical librarian at the hospital, Twenty-Ninth Street and Ellis Avenue.

—The University of Chicago will receive $1,500,000 from the Rockefeller Foundation for research in the biologic sciences, provided an additional sum of $500,000 can be obtained from outside sources before June 30, 1941. During the next three years the foundation will provide $180,000 at the rate of not more than $60,000 a year for biologic research. This grant has been made so that the equivalent of the income of the capital sum of $1,500,000 will be available to the university during the period allowed for raising the sum of $1,500,000. Should the university secure the funds in a shorter period, the temporary annual grants will be canceled. The foundation has provided grants for the support of basic laboratory research in fundamental biologic problems since 1929 and the new endowment will support this work permanently on a larger scale.

—A graduate course in obstetrics and pediatrics will be conducted by the department of obstetrics and pediatrics at Research and Educational Hospital during July and August. The speakers will include Drs. Joseph L. Baer, Frederick H. Falls, Fred L. Adair, William C. Danforth, Abraham F. Lash, William H. Browne and Charles Newberger, all obstetricians, and Drs. Julius H. Hess, Clifford Grulee, Arthur H. Parmelee, Isaac A. Abt, Maurice L. Blatt, Robert A. Black and Henry E. Irish, all pediatricians. The course, consisting of lectures on special subjects, round table discussions, ward walks in the hospital, dispensary service, manikin, home and hospital delivery, is designed to meet the needs of the general practitioner as

they are encountered in everyday practice. The registration fee is ten dollars; checks should be made payable to the University of Illinois, 1853 West Polk Street.

Deaths

Minnie Ridgeway Bishop, Chicago; Hahnemann Medical College and Hospital, Chicago, 1889; aged 77; died, April 13, of bronchitis and myocarditis.

Walter Lawrence Blomgren, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1915; a Fellow, A. M. A.; served during the World War; aged 44; died, April 20, in the Edgewater Hospital of staphylococcic septicemia.

Canute L. Brudewold, Chicago; St. Louis Medical College, 1887; aged 72; died, April 10, of carcinoma of the stomach.

Russell Newton Davis, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; on the staff of the South Shore Hospital; aged 54; died, April 30, of coronary thrombosis.

Alice Honce, Peoria, Ill.; Keokuk (Ia.) Medical College, College of Physicians and Surgeons, 1904; aged 73; died, May 1, in St. Joseph's Hospital, Kokomo, Ind., of injuries received when struck by an automobile.

William M. Honn, Champaign, Ill.; National Medical College, Chicago, 1899; member of the Illinois State Medical Society; past president of the Champaign County Medical Society; aged 66; on the staff of the Burnham City Hospital, where he died, May 7, of heart disease.

William A. James, Chester, Ill.; St. Louis Medical College, 1881; member of the Illinois State Medical Society; aged 83; died, April 15, in St. Clement's Hospital, Red Bud, of intestinal obstruction.

Flemming, Loureston Liggitt, Rankin, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; president of the school board; aged 64; died, May 17, in the Lake View Hospital, Danville, of hemiplegia and cerebral hemorrhage.

Gustav August Miller, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; on the staff of St. Elizabeth Hospital; aged 71; died, May 6, of cerebral hemorrhage.

Clarence Eugene Pierce, O'Fallon, Ill.; Washington University School of Medicine, St. Louis, 1903; aged 66; died, April 9.

Vance Rawson, Chicago; Hahnemann Medical College and Hospital, Chicago, 1901; a Fellow, A. M. A.; formerly member of the school board in Danville, Ky.; served during the World War; at one time professor of internal medicine at his alma mater; on the staff of the Chicago Memorial Hospital; aged 61; died, April 19, of coronary thrombosis.

Lewis Thomas Rhoads, Lincoln, Ill.; Hahnemann Medical College and Hospital, Chicago, 1902; member of the Illinois State Medical Society; past president of the Logan County Medical Society; served during the World War; formerly member of the school board; on the staffs of the Evangelical Deaconess Hospital and St. Clara's Hospital; aged 63; died, April 13, of chronic myocarditis.

John Ritter, Miami, Fla.; Rush Medical College, Chicago, 1880; a Fellow, A. M. A.; assistant professor emeritus of medicine at his alma mater member of the Illinois State Medical Society; author of "Handbook of Tuberculosis for Medical Students and Practitioners of Medicine"; aged 84; died, May 23, in Springfield, Ill.

Eva S. Shaver, Chicago; National Medical University, Chicago, 1903; aged 67; died, April 6, in the Norwegian American Hospital of hypertension and chronic myocarditis.

Joseph A. Smith, Chicago; Chicago College of Medicine and Surgery, 1909; a Fellow, A. M. A.; aged 54; died, April 3, in Miami Beach, Fla.

Orion Kemper Thomson, Chicago; Miami Medical College, Cincinnati, 1889; aged 71; died, March 11, of chronic nephritis, prostatitis and arteriosclerosis.

Alfred Lubbert Van Dellen, Chicago; Northwestern University Medical School, Chicago, 1910; a Fellow, A. M. A.; member of the American Academy of Ophthalmology and Oto-Laryngology; on the staffs of the Illinois Eye, Ear, Nose and Throat Infirmary and the Englewood Hospital; aged 50; died, April 1, at Rochester, Minn., of ureterolithiasis.

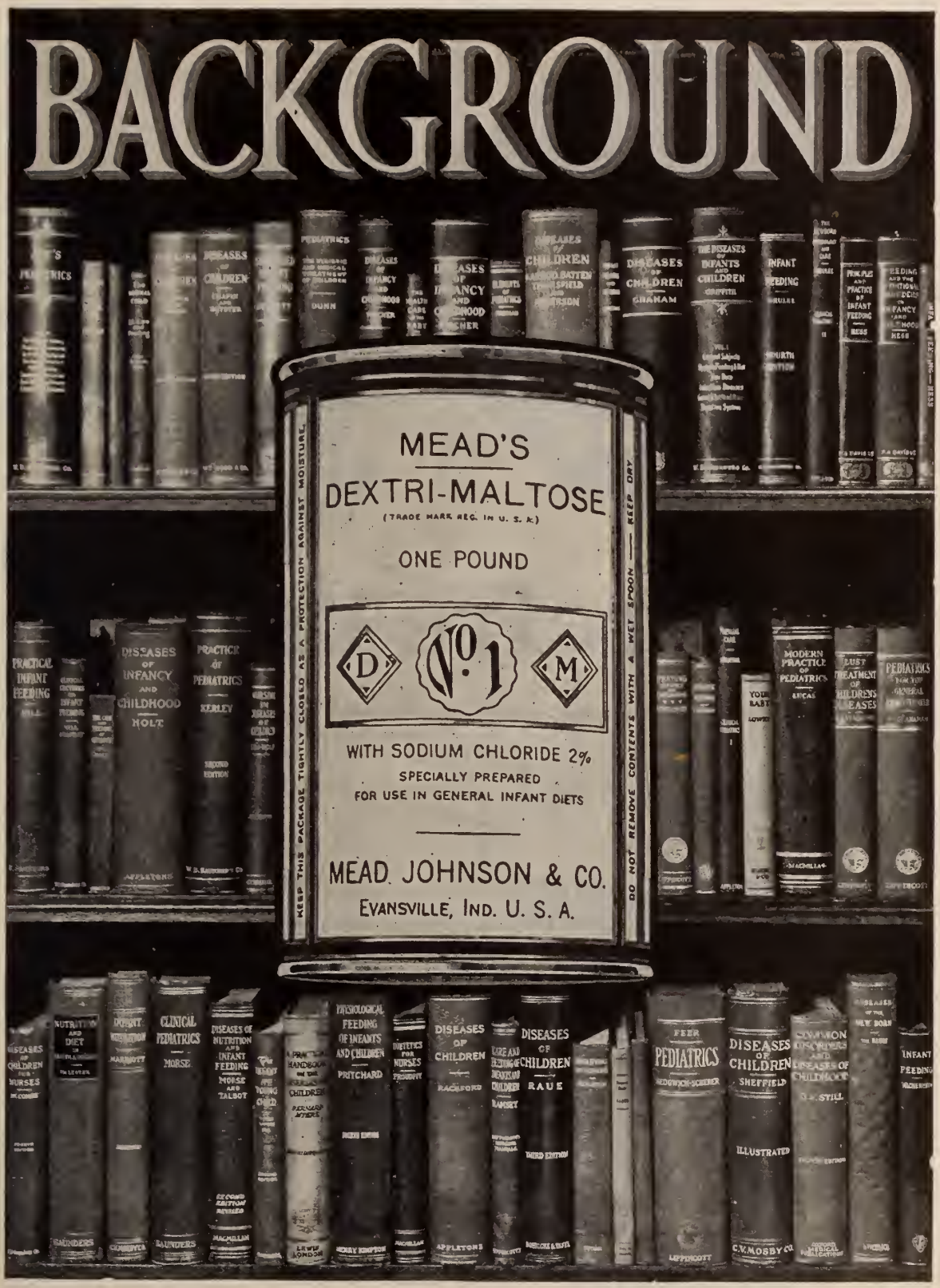
Charles Walden, Harrisburg, Ill.; St. Louis College of Physician and Surgeons, 1909; aged 65; died, April 25.

Marcus Bryed Wilson, Chicago; University of Illinois College of Medicine, Chicago, 1916; a Fellow, A. M. A.; on the staff of St. Luke's Hospital; aged 53; died, May 16, of coronary thrombosis.

John Desha Witt, Aurora, Ill.; Hahnemann Medical College and Hospital, Chicago, 1906; aged 63; died, March 2, of coronary occlusion.

George Anthony Zeller, Peoria, Ill.; St. Louis Medical College, 1879; member of the Illinois State Medical Society; veteran of the Spanish-American War; formerly state alienist; at one time superintendent of the Peoria State Hospital, and managing officer of the Alton (Ill.) State Hospital; aged 79; died, June 29, of cardiac insufficiency and bronchopneumonia.

Henry Turman Byford, Chicago; Chicago Medical College, 1873; a Fellow, A. M. A.; professor of gynecology emeritus, University of Illinois College of Medicine; member of the Western Surgical Association; fellow of the American College of Surgeons; on the staffs of St. Luke's and Chicago Lying-in hospitals; honorary president of the International Congress of Gynecology in 1896 and president of the Chicago Gynecological Society during 1887 and 1888; author of "Manual of Gynecology"; joint author of "Diseases of Women," "American Text Book of Gynecology" and various other books and papers on the subject of gynecology; aged 84; died, June 5, of chronic myocarditis and nephritis.



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A Textbook of Gynecology: By Arthur Hale Curtis, M. D., Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecological Service, Passavant Memorial Hospital, Chicago, Illinois. Third Edition, Reset. 603 pages with 318 illustrations. Philadelphia and London: W. B. Saunders Company, 1938. Cloth, $7.00 net.

This volume contains eight chapters preliminary to the entirely rewritten subject matter which comprised the bulk of the preceding edition. Much of the new material in these first chapters is concerned with Anatomy and Physiology; there is also a detailed consideration of the Endocrines.

In this edition the author has presented the specialty of Gynecology in concise form and in an entirely independent manner, the text is no longer essentially a record of personal experience, for the author has searched the literature and has studied with painstaking thoroughness and this volume therefor, covers the entire field of Gynecology.

The American Illustrated Medical Dictionary: A complete Dictionary of the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc. By W. A. Newman Dorland, A. M., M. D., F. A. C. S., Lieut.-Colonel, M. R. C., U. S. Army; Member of the Committee on Nomenclature and Classification of Diseases of the American Medical Association; Editor of the "American Pocket Medical Dictionary." With the collaboration of E. C. L. Miller, M. D. Medical College of Virginia. Eighteenth Edition, Revised and Enlarged. 1607 pages with 942 illustrations, including 283 portraits. Flexible and Stiff Binding. Philadelphia and London: W. B. Saunders Company, 1938. Plain, $7.00 net. Thumb Indexed, $7.50 net.

Since the publication of the previous edition of the Dictionary, new terms have appeared in medical literature with astonishing rapidity. This edition aims to include these additions. New terms and improved definitions appear on every page. Over three thousand new words have been defined. As a result, the text of the volume has increased by more than sixty pages.

Diseases of the Skin for Practitioners and Students: By George Clinton Andrews, A. B., M. D., Associate Professor of Dermatology, College of Physicians and Surgeons, Columbia University; Chief of Clinic, Department of Dermatology, Vanderbilt Clinic; Fellow of the American Medical Association, of the American College of Physicians, and of the New York Academy of Medicine. Second Edition, Entirely Reset. 899 pages with 938 illustrations. Philadelphia and London: W. B. Saunders Company, 1938. Cloth, $10.00 net.

This edition evaluates the advances made in Dermatology since the first edition was published and fits them

into an up-to-date and practical texebook on dermatology. The numerous advances made in the last few years made it necessary to revise every page. Over seventy-five new diseases have been added, and there are new chapters on dermatoses due to filterable viruses, vitamin deficiencies, and cutaneous infiltrations with products of metabolism.

Pathological Technique: By Frank Burr Mallory, A. M., M. D., S. D., Consulting Pathologist to the Boston City Hospital, Boston, Mass. 434 pages with 14 illustrations. Philadelphia and London: W. B. Saunders Company, 1938. Cloth, $4.50 net.

This book is a selection of formulas that practical experience has shown to be of value. It is an up-to-date volume of accepted pathological techniques. It is intended for pathologists, in hospital laboratories and medical schools, for students and practitioners interested in pathology, and for technicians trained in that line of work.

A Textbook of Bacteriology: By Edwin O. Jordan, Ph. D., Late Andrew McLeish Distinguished Service Professor of Bacteriology in the University of Chicago. Revised by William Burrows, Ph. D., Assistant Professor of Bacteriology in the University of Chicago. Twelfth Edition, Reset. 808 pages with 197 illustrations. Philadelphia and London: W. B. Saunders Company, 1938. Cloth, $6.00 net.

This work has gone in twelve editions in rapid succession which is sufficient testimonial showing its popularity. Much of the work has been rewritten, a new figure has been added showing the types of bacterial filters commonly used. The most extensive revision has been made in the chapter on virus diseases. Numerous minor changes have been made.

A Textbook of Histology: By Alexander A. Maximow, Late Professor of Anatomy, University of Chicago; and William Bloom, Associate Professor of Anatomy, University of Chicago. Third Edition, Completely Revised. 668 pages with 542 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company, 1938. Cloth, $7.00 net.

In this edition the author has brought the subject of histology up-to-date. As in the previous editions, physiological data have been included when they have correlated with structure, and pathological materials where it helps to explain normal structure and function.

Outline of Roentgen Diagnosis. By Leo G. Rigler, M. D. Exclusive text edition. Philadelphia, London, Montreal, New York. J. P. Lippincott Company, 1938. Price for the Atlas Section $6.50; for the Student Edition $3.00.

This work is an orientation in the basic principles of diagnosis by the Roentgen method. Unique drawings by Jean E. Hirsch—a plenteous supply of Roentgenograms and Dr. Rigler's distinctive treatment of the whole subject makes a volume of great usefulness to every man in medicine.

Vitamins and Their Clinical Application. A Brief Manual. By Prof. W. Stepp, and Doctor Kühnau and Dr. H. Schroeder. Translated by Herman A. H. Bauman, M. D. Minneapolis, Minnesota. Milwaukee, Wisconsin. The Vitamin Products Company, 1938.

This work is an up-to-date treatise of the various ramifications of the vitamin chemistry and therapy.

Of Yesterday and Tomorrow. By E. O. Loughlin (Eolus), Kansas City, Mo. The Brown-White Company. 1938. Price $1.50.

This work contains more than one hundred poems. A book beautifully bound in cloth, gold stamped.

Years ago Dr. E. O. Loughlin wrote "Johnnie," A Story of Boy Life. It was sponsored by his friend, James Whitcomb Riley, well received by reviewers throughout the country and enjoyed a steady sale for twenty years, running through many editions, including a de luxe reissue, with illustrations by the Hoosier artist, Will Vawter. Now, in his maturity, he offers a collection of poetry, written in the intervening years—verse as varied as the moods of nature and of man; verse that touches the heart, such as *The Unknown,* listed by The New York Times as one of "The Best Loved Poems of the American People"; verse that is lofty and inspiring, such as *The Lincoln Circuit;* verse that is reflective and philosophic; verse fanciful, satirical, humorous and, now and then, trivial. Most of it is minor poetry: readable, understandable, quotable; the sort that vibrates and sings.

Many poems in the volume have appeared in the Line o' Type column of the Chicago Tribune, to which, over the name of "Eolus", Dr. Laughlin has long been a regular contributor. Others were first published in such periodicals as Harpers Magazine, Harpers Bazaar, The Bookman, The New Yorker, Judge and The Ladies Home Journal. In the last named magazine *The Unknown* was featured several years ago. This poem was later broadcast by NBC, and has been read frequently in connection with the placing of flowers upon the tomb of the Unknown Soldier at Arlington.

The author's poetry has been extensively copied and commented upon by the press and included in numerous anthologies.

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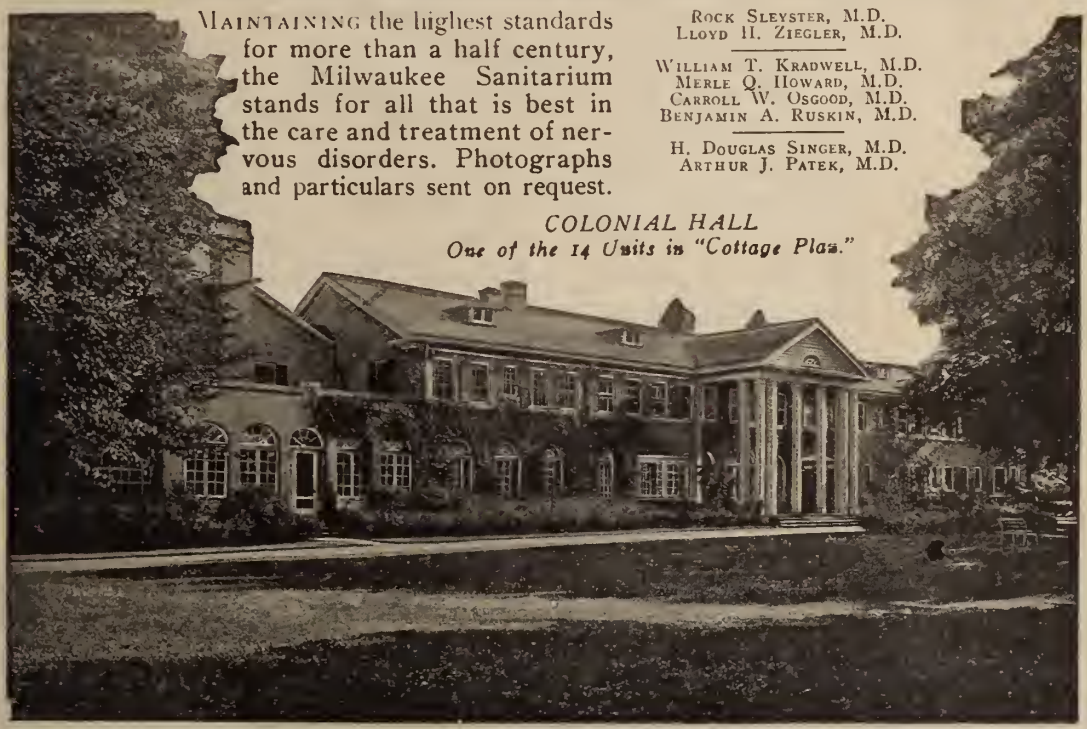
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[1] *Jl. A. M. A.* 100:1002 (April 1) 1933.

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RECENT ADVANCES IN THE SCIENCE OF NUTRITION

I. THE ROLE OF RIBOFLAVIN IN HUMAN NUTRITION

● In 1933, a series of articles on the vitamins was published, each article written by an authority in the field of nutrition. These papers served to summarize existing knowledge concerning these essential factors. During 1938 a similar series of articles has been issued. Comparison of related papers in these two series will indicate the most important advances in the science of nutrition which have been made in the course of the past five or six years.

In the first series of articles mentioned above, only two of the better known members of the old vitamin B complex received extended discussion (1). The more recent series, however, is characterized by the inclusion of a number of papers on riboflavin which, since 1932, has assumed a new significance in human nutrition (2). As compared with other factors with which it is often associated in nature, the rise of riboflavin to importance in human nutrition is somewhat anomalous.

For example, the effects upon humans of severe dietary deprivation of vitamin B_1 and the P-P factor are well known, in fact, such effects in themselves afford proof of the indispensable nature of these factors. While riboflavin is apparently concerned in cellular oxidation processes of mammals, the specific effect on humans of riboflavin deficiency is not known. Nevertheless, from the weight of evidence accumulated during the last five years, riboflavin is generally accepted as important in human nutrition. Authoritative opinion concerning riboflavin has been succinctly expressed as follows:

> "The fact that we do not know any specific human disease due to shortage of riboflavin is entirely compatible with the view that this substance is important in human nutrition. A detailed discussion of reasons for believing that riboflavin plays a role in the life process of the human as of other species would probably seem superfluous to a majority of readers at this date, and to a still larger majority in the future. Suffice it to point out that our species has evolved in the direction not of shortening the list of things it needs but of lengthening the list of things it can use to advantage." (2c)

Chemically, riboflavin is described as 6, 7 dimethyl-9 (d-l' ribityl) iso-alloxazine; a yellow-green, heat-stable pigment enjoying wide distribution in the plant and animal kingdoms. Many foods, therefore, of both plant and animal origin supply valuable amounts of this essential factor, specifically, fruits, vegetables, particularly the leafy pigmented types, and animal products such as milk and dairy products, meats, liver, and fish. It may, perhaps, be too early to estimate the daily human requirement for riboflavin. However, one rather liberal recommendation lists 600 units* as required daily by older children and adults; the estimated riboflavin requirement for younger children is somewhat less (2c).

In view of the above facts, attainment of an adequate intake of riboflavin would appear to be best insured by a varied dietary regime which includes the so-called "protective" foods. In the formulation of such diets, commercially canned foods may be particularly valuable. The older "vitamin G" assays —which are now known to measure principally the riboflavin contents of foods—indicate that modern canning procedures are without significant effect upon riboflavin. In addition, many foods valued for their contribution of this factor are canned commercially and hence are conveniently available at all seasons on practically every American market. Therefore commercially canned foods may be freely used in arranging such protective diets and they should materially assist in providing an adequate supply of this newly recognized dietary essential, riboflavin.

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*Bourquin-Sherman.
1. 1932. J. Amer. Med. Assn. 98, 2201 and 2283
1932. Ibid. 99, 26 and 121.
2a. 1938. J. Amer. Med. Assn. 110, 1105.
b. 1938. Ibid. 110, 1188.
c. 1938 Ibid. 110, 1278.

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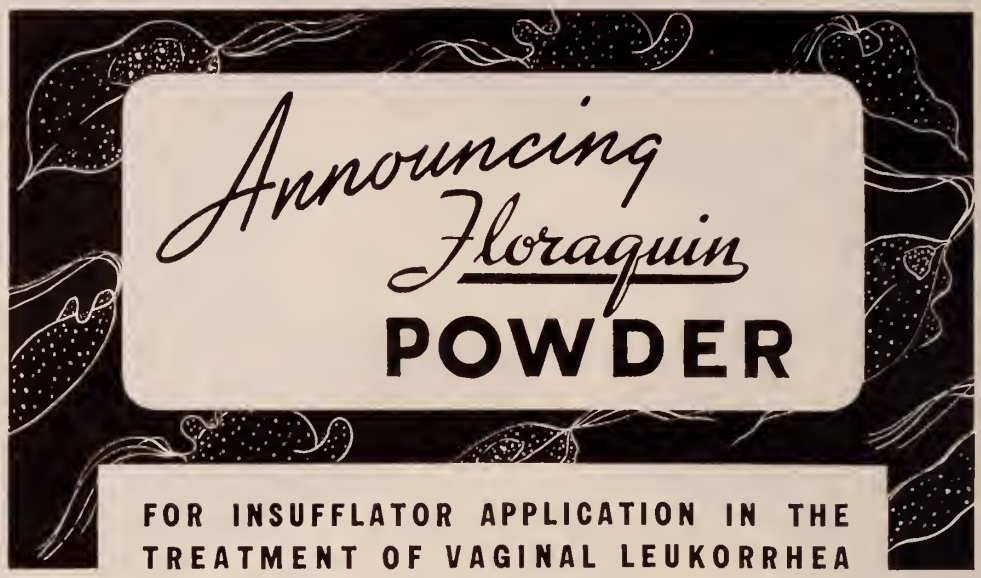


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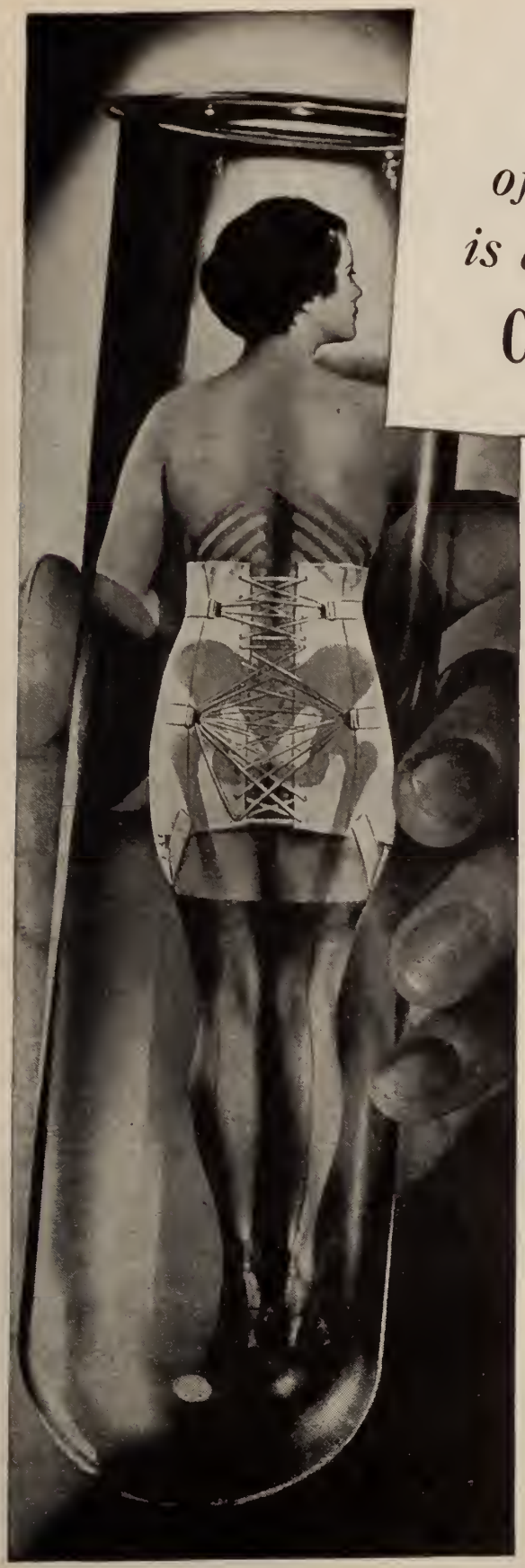
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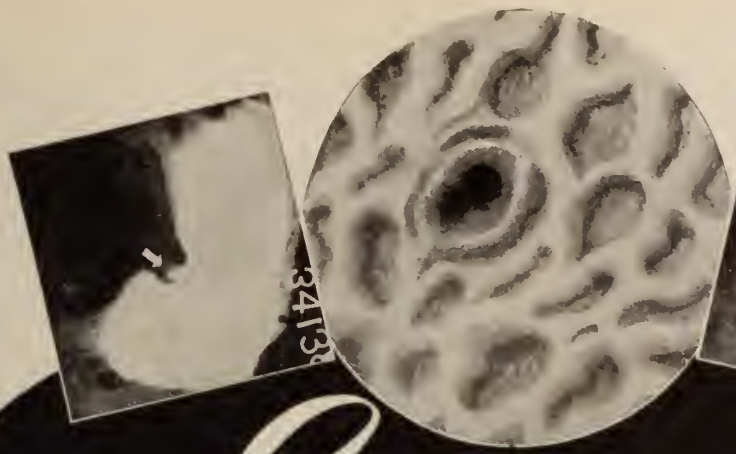
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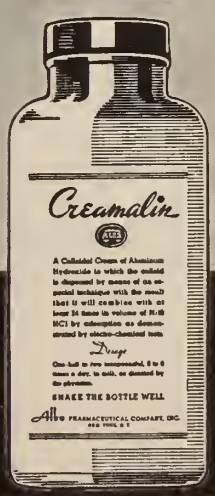
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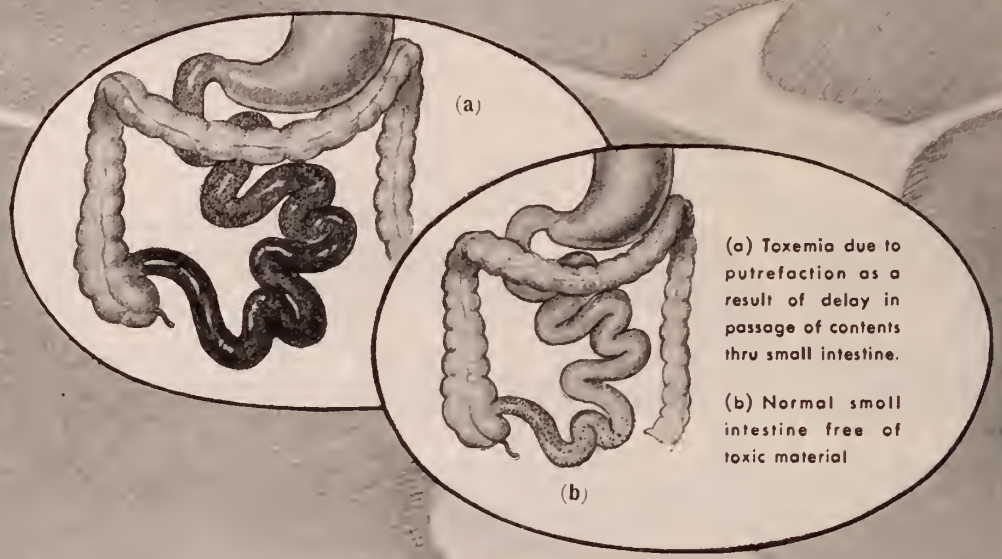


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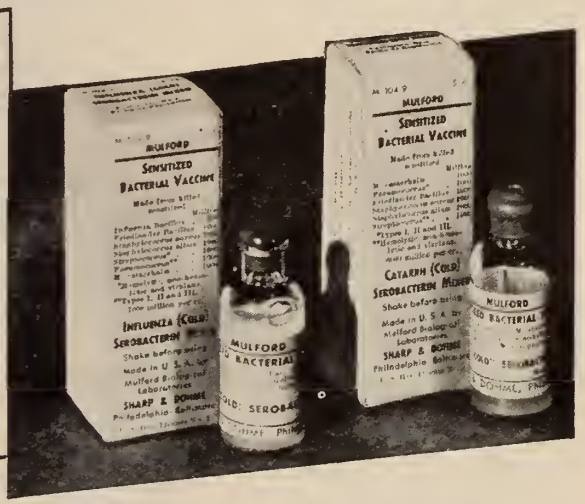
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THE OFFICIAL ORGAN OF

THE ILLINOIS STATE MEDICAL SOCIETY

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Editorials

THE DOCTORS SIDE OF THE SOCIALIZED MEDICINE CONTROVERSY SUPPORTED BY LEADING COLUMNISTS THROUGHOUT THE NATION

Thurman Arnold, of the Department of Justice, by filing proceedings against The American Medical Association, stirred widespread editorial comment. Seldom has an action taken by the Department of Justice aroused the public interest and attention developed by this action. In most of the newspapers editorial comment has appeared explaining the doctor's side of the controversy. The following editorial comment on the Arnold Medical Anti-Trust proceedings which have appeared in many of the most outstanding newspapers and magazines throughout the country is reproduced for the benefit of physicians generally:

IF DOCTORS, WHY NOT BARBERS OR BANK OFFICIALS?

HERMAN GASTRELL SEELY

Chicago Daily News, August 2, 1938

ACTION AGAINST AMERICAN MEDICAL SOCIETY OPENS NEW "TRUST" FIELD

Quite aside from medical care and other social aspects, this government move against the American Medical Society is of direct importance to trade unionists, professional men, and service businesses supposedly immune from anti-trust regulation.

For the doctor, it should be realized, has nothing to sell but his services. He may leave a few pills or order a prescription filled at the nearest drug store, but this bit of merchandising, if it may be so termed, is purely incidental to his visit. His real mission is to use such skill and knowledge as he may possess to make a sick patient well.

The hospital, likewise, is primarily a service organization. The patient within its walls buys no merchandise; he pays his money for laboratory tests, operating facilities, and such nursing and other care as is necessary to make him a

physically fit member of society again. If he dies, his estate is presented with a bill on a basis of services rendered rather than for merchandise purchased.

Thus the Department of Justice attacks the American Medical Society and its members and affiliates as a monopoly of services.

ACTION SETS PRECEDENT

Hitherto federal antitrust prosecutions have been based on charges of a conspiracy to fix prices on physical goods, restraint of trade or interference with interstate commerce.

At times, as in the recent Madison oil trials, the federal investigation concerned itself purely with corporations and corporate officialdom. On other occasions, as in some of the building material indictments returned in Chicago in the early 1920s, labor leaders became involved as party to a conspiracy in violation of the antitrust laws.

Always, however, there was the element of interstate commerce in tangible physical property involved.

OPENS NEW FIELD

In moving against a monopoly of services, therefore, the Department of Justice has opened a new field of antitrust activity that is tremendous in its scope. Certain parallel possibilities suggest themselves immediately.

If the federal threat of action against a purely service organization be followed by indictments and convictions, are the barbers, the dry-cleaners and other service trades as immune from price fixing prosecutions as certain state court decisions have led them to believe?

If hospitals can be prosecuted for refusing to accept patients of a cut-rate "nonunion" medical clinic, can the plumbers, carpenters, fixture hangers or similar unions be punished for refusal of their services in installing nonunion materials on a building job?

Or if social aspects justify the intervention of the government in behalf of low-priced medical care for the masses, can the same argument be used to crack down on net of make-work rules that help to keep building costs high?

PROFESSIONS INVOLVED

This precedent setting action by Attorney General Cummings and his assistants is of tremendous importance also to all professions.

Are the banking group immune from federal or state action if they prescribe or urge uniform service fees for small accounts or other bank activities?

Can the American Bar Association or a state bar association lawfully suggest schedules of fees to be charged by their members?

Can any professional organization, be it composed of lawyers, doctors, dentists or real estate operators, engage in promotional activities that may lead to monopoly in any particular field?

NOT SO SURE NOW

Last week the answers to these questions would have deemed anti-monopoly action remote on the ground that only services were affected and that punishment, if any could be obtained best by prosecution for boycott.

Today at least one well-known firm of attorneys is not so sure that the drive against the doctors is not the beginning of the end for a long list of service group immunities.

Meanwhile the government case against the American Medical Society is still to be taken out of the controversial stage and reduced to the cold legal phraseology of indictments, lower court decisions and a final ruling by the United States Supreme Court.

DR. ARNOLD PRESCRIBES

America, August 13, 1938

Having lost, at least for the present, its case against the mining companies in Harlan County, Kentucky, the Government announces that it will proceed against a medical society in Washington under the anti-trust Act. No labor law was invoked in the Harlan case. The Government went to work under a statute enacted shortly after the War between the States. This legislation, arising out of the Klan disorders, provided jail sentences for citizens who conspire to deprive others of their civil rights. In the case at Washington, the Government relies on labor statutes to coerce members of a profession.

We pass no judgment on the immediate issue in this case. That can be left to the courts. It will not be improper, however, to observe that counsel representing the Department of Justice, Thurman Arnold, is the author of *The Folklore of Capitalism,* a "liberal" treatise in which Government rights are exalted at the expense of the rights of the individual, and of private groups. Nor will it be improper to ask how members of a learned profession can be subjected to laws which

refer to restrictions upon trade and commerce. Is the practice of medicine "commerce"? Is the physician an employe in the sense of these anti-trust Acts?

As we have observed in discussing "socialized medicine," some physicians have very little of the professional spirit. Their first aim is not the welfare of the patient, but their fee. But physicians of this degraded type constitute a minority, and as a whole, the medical profession is distinguished for its charity and self-sacrifice. It seems to us that the American Medical Association would do well to cooperate with associations which are endeavoring to provide adequate medical service for their members at a cost which sufficiently remunerates the physician and is not too burdensome on the patient. We realize, however, that the commercial character of some of these associations constitutes a danger against which the A. M. A. is rightly on guard.

Should the Government persist in classifying physicians as individuals subject to the anti-trust laws, some curious reactions will become possible. Physicians might form themselves into unions. By this move they would place themselves beyond the penalties of the Sherman and Clayton Acts, and within the protection of the Wagner Act. As members of a union, they would demand a forty-hour week, and a double fee for over-time work. This over-time would, of course, be optional with the physician. He would no longer be obliged to visit a patient dangerously ill, should the crisis arrive on Sunday, or at two o'clock on a stormy morning.

But nothing of the sort will happen. All this fury emanating from the Department of Justice is nothing but a tempest in a tea-pot. No physician will go to jail. No branch of the A. M. A. will be convicted for restraining trade. What the Government wants to do is force on the American people a type of medical care approved by the author of *The Folklore of Capitalism*. In this it should not succeed, and we do not think it will.

SOCIALIZED MEDICINE

Chicago Daily News, August 2, 1938

The announced intention of the Department of Justice to bring suit against the American Medical Association under the anti-trust laws raises some interesting questions.

The department, according to the New Deal's new trust buster, Assistant Attorney General Thurman Arnold, thinks that the anti-trust laws apply to the offering of services as well as to the production of goods. That, if we are not mistaken, is a new interpretation. The line between offering ones services and offering one's labor is hard to draw. If Mr. Arnold can make this new interpretation stick, will there not be a conflict between the Wagner act, which favors collective bargaining in the offering of labor, and the anti-trust laws, which might then be twisted into a weapon against trade unionism?

Specifically, the federal government charges that the American Medical Association is conspiring to make group health plans impossible, by expelling from the association doctors who join in such plans, and by forbidding its members to aid patients who subscribe to such plans. If it is true that the association does this, and does it in a spirit of opposition, not because it is seeking to maintain high ethical and technical standards in the profession, we think it is following a mistaken course. Mr. Arnold should produce the evidence.

But meanwhile, it is intimated that if the association will change its policy so as to encourage health plans in future, the government may drop its suit. Does this mean that the New Deal, in its continued mood of socialistic experiment, is bent now upon bringing about socialized medicine? If that is the real aim, the administration should say so plainly. Certainly the people are entitled to the best medical care that the science and devotion of the medical profession can provide. But is not the profession already giving such care? Every community has hospital arrangements for patients too poor to pay. Every conscientious physician and surgeon contributes some of his time without charge to the service of the poor, and does so quietly, as a matter of course. But we do not believe that the profession as a whole, is in a mood to submit, even under pressure, to New Deal regimentation. And neither do we believe that the average American citizen is in a mood to let the government tell him, when he falls ill which doctor he must have.

PROSECUTING THE DOCTORS

Chicago Daily Tribune, August 2, 1938

The department of justice has announced its intention of proceeding against the American Medical association and its affiliated Washington society as a conspiracy in restraint of trade. The evidence is about to be presented to a federal grand jury for appropriate action.

Thurman Arnold, assistant attorney general in charge of monopoly prosecutions, has issued a statement of his reason for the present action. Mr. Arnold says that some 2,500 government pay rollers in Washington have joined what they called Group Health Association, Inc. The members pay a flat fee and in return receive medical services as needed. The medical society disapproved the plan. Physicians in Washington were put on notice that if they accept employment from Group Health association they would be dismissed from the society. Likewise, physicians who were summoned into consultation by the Group Health staff were to be expelled. According to Mr. Arnold that meant, in turn,

that their hospital connections would be severed. The experience of the physicians led by Dr. Louis Schmidt who were disciplined by the Chicago Medical society for cooperating with a number of low cost medical clinics in Chicago no doubt served as a precedent for the action of the Washington branch.

A great many persons, including a substantial number of medical men, believe the doctors' societies have been too zealous in preserving the traditional professional relationship. It is not necessary to go into the merits of that controversy. The worst that can be said of the medical societies—and it has been said often—is that they have been following trade union practices. Members have been subjected to regulations which forbid them, under penalty of explusion from their union, from freely contracting for their services.

The American Medical association, in short, is facing prosecution as a trade union. This is curious because trade unions are specifically exempt from the operations of the anti-trust laws. It is doubly curious because of all the trade unions ever known the medical association is the one which has been the least selfish, the most public spirited.

There is no union scale for doctors. There are no union hours. The ablest medical men in every community give their services without pay to the poor as a matter of course. Few doctors are rich and many an able physician earns little more than a bare livelihood. Thanks largely to their trade union, the standards of training and competence in the profession have risen steadily with the years. Eight or ten years of strennous study and apprenticeship are required before a doctor is permitted to earn a thin dime.

This administration in Washington has given every encouragement to C.I.O. unionism, characterized by the grossest kind of coercion. The C. I. O. has been egged on to crack the skulls of workmen who didn't care to join its ranks; to seize and hold property in violation of law and justice; to wreck factories, resist the police, intimidate local officials. The aim was to deny to the man who refused to join the C. I. O. every chance to work. All this and much more like it has had the full blessing of the administration. Indeed, the labor board has repeatedly ordered the reemployment of the C. I. O. men guilty of rioting.

But when the doctors in pursuit of an ideal of the proper relation of physician to patient have done no more than expel from their society members who refused to accept its rules of ethics, the medical association is haled into the courts almost as a common criminal.

To earn the regard of this administration the American Medical association should have ordered its members to accept no less than $10 for a call, cash in advance, and to refuse treatment except on those terms; should have picketed the offices of doctors who refused to accept its scale of wages and hours; should have brought in plug-uglies armed with baseball bats to wreck the laboratories of Group Health association and brain any one attempting to enter the place.

The kind of trade unionism represented by the A. M. A., which establishes high professional standards for its members, continually raises those standards, publishes important scientific journals, and demands of every member that he put his patient's interest above his own is criminal in the Washington of 1938.

IS THERE A MEDICAL MONOPOLY?

St. Louis Post-Disptach, August 5

An interesting and perhaps highly significant development in the debate over providing adequate medical care for all the people is the Department of Justice's announcement that it will seek a grand jury investigation in the District of Columbia into the activities of organized medicine. The department was convinced by its own inquiry, says Thurman Arnold, Assistant Attorney-General, that violations of the antitrust laws had occurred.

A workers' health cooperative, similar to many that have sprung up in recent years all over the country, is the center of the dispute. Members of these groups pay dues, in return for which they receive medical care when needed from physicians retained by the organization. Orthodox medical organizations have opposed such groups virtually wherever they have appeared.

In Washington, it is alleged, they attempted to stop operation of the cooperative by threatening its staff physicians, and even doctors who consulted with them, with explusion from the District Medical Society. Group physicians were barred from practice in Washington hospitals, it is charged. Mr. Arnold views such tactics as "attempts on the part of one group of physicians to prevent qualified doctors from carrying on their calling."

Whether or not actual violations of the antitrust laws occurred, there is no disputing the fact that the actions of organized medicine—the American Medical Association and most of the state and local societies—in opposing various humanitarian health plans have on all too many occasions savored of efforts to safeguard a monopoly for their members.

Millions of persons in this country cannot meet medical bills for their illnesses, not to mention those for periodic examinations on which preventive medicine, the basis of a healthy nation, must depend. On the other hand, there are thousands of physicians who, despite this crying need for their services, are able to make only the barest of livelihoods. To bring demand and supply together is the motive of the plans that have been proposed, which include socialized medicine, compulsory health insurance, government subsidies and voluntary cooperatives.

Of all these, the cooperative is the most moderate, the solution least upsetting to the present system. Yet organized medicine opposes it as well, as was seen a few months ago in St. Louis when the local medical society sought to bring an ouster suit against the Missouri Pacific Hospital Association, which supplies medical services to that railroad's employees. Fortunately, the Attorney-General's office refused to institute the proceeding.

A ferment for better and more widespread health services is stirring among the people, as well as among many forward-looking members of the profession. A committee of 430 members, since grown to more than

1,000, last fall launched a formidable "revolt" to liberalize the attitude of the American Medical Association. The caliber of the men who signed this "medical declaration of independence" proves that the movement must be taken seriously. For instance, among St. Louis physicians on the original list were Vilray P. Blair, David P. Barr, the late Ellis Fischel, Borden S. Veeder, H. L. Alexander, J. Albert Key, Ernest Sachs, Fred Taussig, Evarts A. Graham and Sidney I. Schwab.

Many of the practitioners who oppose a change are undeniably sincere, but their arguments have been refuted in numerous foreign countries where various forms of practice designed to reach the masses at costs within their means are in successful operation, and without the deterioration of ethical standards or medical practices which our own alarmists predict.

A committee of health experts has recently urged an $850,000,000-a-year program of government public health activities. With such a vast scheme in the air, organized medicine isn't very smart in opposing the moderate cooperative plan, in which no subsidy is paid and no government interference exists. The sole ground for opposition seems to be "unfair competition," but the patient who benefits by a cooperative plan can give that plea little hearing, particularly since under competitive medicine fees are still at a point where an unexpected illness may be ruinous to an ordinary family budget.

The reply of the American Medical Association's president-elect, Dr. Rock Sleyster of Milwaukee, indicates no yielding in organized medicine's stand. He insists the A. M. A. "has the right to enforce certain membership requirements and expel members who fail to comply with them," and that "hospitals are private institutions and have the right to determine which doctors shall practice in them."

It is assuredly true that these rights exist, but invoking them against the health cooperatives and their staff physicians betokens a stand against progress, a closed mind against the enlightened experimentation without which medical economics, exactly like medical science, cannot advance.

Mr. Arnold's action may not disclose a "medical trust," but it should cast needed light on the efforts of standpat groups to block a long-needed reform. Punishment of any persons guilty of threats and coercion would be welcome, but better would be the awakening of a cooperative spirit in those who now oppose all changes in the private fee system.

REGULATION GONE MAD

Alton (Ill.) Evening Telegraph

It is announced that the trust busting part of the New Deal is to proceed with criminal action against representatives of the American Medical Association because that body is enforcing its rules against doctors, and in the control of hospitals recognized by the A. M. A. The announcement certainly caused a great surprise to the doctors who have regarded it as their own right to set up such rules and regulations as they deem best for the interests of their profession. The surprise over the announced criminal prosecution of the doctors was not limited to medical men but extended to practically all others. The question is, where can one expect the prosecution to be stopped? Will it take in representatives of all the voluntary associations of cults and crafts and professions which set up rules by which exclusion becomes the penalty for failure of a member to live up to them?

It is recalled that some time ago a suit came to a conclusion in which oil men were penalized for living up to rules and regulations designed for conservation of the oil business, promulgated by them at the very suggestion of a department of the federal government. There are other prosecutions in sight so that people who belong to trade organizations, or to any other groups, have come to be a bit shaky. Is there any reason why, if it is unlawful for such groups as the doctors to organize and make their rules, that it is not unlawful for organized labor to prescribe rules under which its services may be sold and fix what working agreements will be acceptable? The pattern of the rules of the doctors and of the labor organiaztions is very much the same. Also the rules of the associations of special groups generally are very much alike in their working and their objects.

It does seem that the use of criminal prosecution is a poor way for the New Deal to persuade groups to accomplish what the New Deal desires. The difference lies in the fact that socialized medicine is strongly opposed by organized medicine, while it is being advocated by the New Deal, to the extent that criminal proceedings will be launched to make it possible.

The doctor has only his services to sell. He has no assets in his profession to leave his family when he becomes disabled or dies. He thinks he should be allowed to control his professional relations in his lifetime. In that last respect he is like every other person who has worked hard and accumulated something he regards as particularly, peculiarly his own by right of achievement. The lawyer with his bar association, the newspaper man with his A. N. P. A., the dentist with his dental society and other such groups are equaly culpable with the doctor, not to mention all the unions in organized labor, all the churches and other religious groups—one and all are just as guilty, just as deserving of prosecution as the doctors, in so far as they may regulate the professions, limiting the actions, the relations of their members to the public and with each other.

The prosecution of the doctors is just another illustration of the madness of the course of the New Deal.

MEDICAL CARE PROBLEMS

New Haven (Conn.) Journal Courier, August 3

Probably what everybody needs most in the present state of the discussion of medical facilities for lower income groups is poise and calm. Assistant Attorney General Thurman W. Arnold has announced an intention of examining in a grand jury investigation the resistance which American Medical Association members and groups are said to make against operation of a group medical care plan among government employees

in the District of Columbia. This is the most recent crisis in a debate running back now two or three years; much of it centering, indeed, in New Haven and the Yale Medical School.

Mr. Arnold is a believer in the usages of symbolism in government, having written two books to prove it. It is not at all unlikely that the grand jury investigation is intended symbolically to represent the national government's attitude toward the question of medical care. To conclude that the A. M. A. or its members or its affiliates will be found guilty of violation of the antitrust acts is certainly a long exercise in forward speculation. As Mr. Lawrence suggests in his dispatch this morning, Mr. Arnold may run afoul of statutes protecting labor unions; one thinks particularly of cases in which the antitrust acts were in earlier history sought to be brought to bear against labor unions.

But whatever the result of such litigation as the Department of Justice seems to propose, it is extremely unlikely that medical care plans, federal or otherwise, will get far without the cooperation of the doctors. The possession of medical skill, after all, is something of a private monopoly; the government cannot force doctors to serve against their will and clearly will not wish to do so. This is no problem in the mobilization of wholly interchangeable laborers to man an assembly line in a mass production factory. No plan for medical care can prosper in the United States without the support of the best practitioners.

It is possible some of those practitioners have been narrow in their judgment of the problem. It is practically certain that narrowness has been overemphasized by critics of the organized profession. Nobody doubts that many competent doctors lack remunerative practice and that many individuals and many areas in the United States lack adequate medical care. The problem will not be settled by tub-thumping on either side. It must be settled in a way which will ensure general cooperation from the medical profession. The public may well demand of both sides toward that end an early meeting of the minds.

SOCIALIZED MEDICINE

Dakota Republican, Vermillion, S. D., August 4

The question of socialized medicine keeps showing up in the public prints. It is quite in line with the other experiments in socialization which the present administraton is fostering, most of which are pitiful failures. A doctor working as a federal official on a stated salary would spend a few hours a day waiting on his patients, and the rest of the time making complicated reports for another army of clerks in Washington to file away. He would no longer take a personal interest in his clients, or strive unduly to advance himself in his profession. It is true that the present system works many hardships. The public funds take care of the medical needs of the indigent. The wealthy class can afford the luxuries of the best available medical and surgical attention, while to the great mass of people of moderate means a major illness in the family becomes something of a financial tragedy. But there are some things that money cannot buy, nor political chicanery provide. We like to think of the doctors we all know who will eat when they can, and sleep when their patients don't need them; men who will get out of a warm bed on a blizzardy night to follow a snowplow for miles to aid some sick or injured person. We have known what the kindly sympathy and thoughtfulness of the doctor can do when there is illness in the family. To say that our doctors are actuated solely by the hope of pecuniary gain is a libel. Such things as that would soon pass away under socialized medicine. Doctors would become mere hired help, putting in their hours, and looking ahead to annual vacations and eventual retirement pay. We want none of it.

AS OLD AS MEDICINE

Binghamton (N. Y.) Press, August 2

Announcement that the Department of Justice is about to initiate antitrust law proceedings against the Medical Society of the District of Columbia and the American Medical Association sounds big and complicated. Big it is, but not complicated at all. It is just the same old business that started way back yonder.

The world was very young then but old enough to know something about the properties of roots and herbs. On the other hand, there was the school that believed in charms and exorcisms, the Shamans who were somewhat political in their viewpoint and who usually held something of a monopoly on the tribal doctoring.

Those boys never got along with the brewers of potions and extracts. In one form or another they have appeared all through the history of medicine. They clustered around the thrones of medieval monarchs and slowed down the development of medicine as a science. When things got hot they had a few heads lopped off; threw some of the struggling medicos of the Middle Ages into the gaol and dungeon. They were able to and did employ the leverage of government on the members of the profession with whose methods they did not agree.

It is unfortunate that coercive action of the type contemplated is being swung as a club over the head of the American Medical Association and its allied groups which have rejected the federal plan of state medicine. An honest division of opinion exists in the medical profession. The chief objection to state medicine which is entertained by thoughtful medical men everywhere is the danger of its control by the laity and the further reasonable belief that politics would get into it and break down medical ethics and medical standards.

In either or both instances the patient would suffer much more than the doctor.

There is room for plenty of argument on both sides, and both sides are recruited from vast numbers of medical men who are entirely honest in their convictions. They aren't being arbitrary about it. Even a great many of those who oppose the idea of state medicine because of its possible effect upon the patient, whose interest every doctor is bound to safeguard, cheerfully admit that the profession may have to give up some of its rights along with the business groups of the country.

In almost every state and county medical society the country over such honest division of opinion exists.

Each side has its own idea of the proper diagnosis. Neither side has, up to now, thought the problem through fully to a point of reasonable solution.

But if coercive methods are employed by the federal government to drive the medical profession of the United States into submission a great many unpleasant things are likely to happen. Even those medicos who are inclined to go along with the administration's plan will resent being driven. There isn't anything in the world quite so stubborn as a doctor. He has to be that way because his battle is with the most stubborn adversary of all.

So the decision to invoke antitrust laws against the medical profession with such obvious purpose is indeed unfortunate. It is to be hoped that the federal government will reconsider before the thing goes too far.

NOW IT'S THE DOCTORS

Wilkes-Barre Record, August 2

It was only a question of time. First the bar got it from the Roosevelt administration. The press got it and is still getting it. The clergymen were dropped like hot potatoes after they had been circularized with questionnaires on the New Deal and had answered according to their own liking but not according to the liking of the administration. Now it is the doctors who are being taken up to the public whipping post. Politely and with some apologies, it is true, but to be spanked, just the same.

American Medical Association has violated the antitrust laws, so charges the New Deal's justice department. A grand jury indictment is to be sought against the medical society of the District of Columbia and the American Medical Association on the allegation that they have expelled a member who cooperated with members of the staff of the Group Health Association, an organization of government employees formed for treatment of its subscribers. Generally the department holds that the District Medical Society, the American Medical Association and some of the officials of both of these organizations "are attempting to prevent this association from functioning."

It seems that the doctors may not have a union. When they combine, the department, in its own words, "interprets the anti-trust law as prohibiting combinations which prevent others from competing for services as well as goods."

An assistant attorney general, possibly thinking that among the doctors were some New Deal voters, carefully explained that the department does not take the view that the offenses committed are crimes which reflect upon the character or standing of the persons who may be involved. He specifically declared there was an absence of moral turpitude. But the law is the law and must be obeyed.

Various polls have revealed that professional classes as a whole have had no enthusiasm for the New Deal. The accused doctors who are told in advance that their offenses are not "crimes which reflect upon the character or high standing of the persons who may be involved" should be grateful for this testimony to their character. The bar and the press have had to get along with less tender treatment.

MEDICAL "UNIONISM"

South Bend Tribune, August 3

In some respects, as the Chicago *Tribune* points out, the medical associations resemble trades unions. They pass judgment on the personal and technical qualifications of persons in the medical profession, extend or withhold the association membership privilege on the basis of that judgment and strive to make nonmembership a serious professional handicap. The Chicago newspaper's observation that "there is no union scale for doctors" should be modified. The fees for services are fairly uniform in various communities, with appreciation of local conditions.

It is true, however, that "there are no union hours" for medical practitioners. No medical association has decreed a forty-four hour week for its members. The public, now that the issue has been intensified by political intervention, should weigh the fact that "the ablest medical men in every community give their services without pay to the poor as a matter of course." Many proponents of socialized medicine argue that the middle class, between the indigent poor and the financially well-to-do, suffers by the present individualistic medical system. The cooperative medical service group in Washington, D. C., on whose behalf the department of justice is intervening for a test case, consists of moderate salaried government employees and of physicians willing to incur medical association displeasure.

Members of the group, pledged to pay $2 to $3 a month for medical service whether or not the eventful service actually matches the financial outlay, obviously classify the individualistic system as a liability. Who is to blame? "Few doctors are rich," the Chicago *Tribune* comments, "and many an able physician earns little more than a bare livelihood." Official statistics confirm that. It is pertinent that physicians with distressingly small incomes—some actually have been on the dole in the larger American cities—devoted years and expended much money, meanwhile sacrificing opportunities to earn, for education for that profession.

The Chicago *Tribune* directs attention to the fact that no labor union has been prosecuted by this federal administration for repressive tactics more violent than those attributed to the American Medical association and its District of Columbia subsidiary. "Indeed," that newspaper recalls, "the labor board has repeatedly ordered the reemployment of . . . men guilty of rioting." When the ethical objectives of the American Medical association are given proper consideration it becomes plain that the federal government should be cautious in the impending proceedings. The welfare of the medical profession and the dependent public should have precedence. A "medical trust" investigation with the familiar flamboyant political trimmings designed to break down professional public resistance to the socialized medicine movement, already concrete in legislative proposals, might cause irreparable damage to public health over the long term.

PUTTING THE SCREWS POLITELY ON THE DOCTORS

New York Sun, August 1

The New Deal's Department of Justice has moved against the American Medical Association as a violator of the anti-trust laws. Its offense, in brief, is that it has expelled one of its members who cooperated with members of the staff of the Group Health Association, an organization of government employees formed for treatment of its subscribers. It is also alleged that Washington hospitals have been shut against the doctors of the group.

A reading of the opinion of the department would be proof that Attorney General Cummings did not write it. Instead of his trustbusting style it has the soft, even pussyfoot, approach of his assistant, Thurman Arnold. Professor Arnold, while under orders to shake a club at the medical association, possibly remembered that some of its members, when they could reach the polls without neglecting the critical case of Mrs. Jones, voted for the New Deal. So he takes pains to explain that the offenses committed are not "crimes which reflect upon the character or high standing of the persons who may be involved." They have no more moral turpitude than a reckless driver who is a person of "distinction and good will in a hurry to mee his legitimate engagements." However, the Professor explains, the law says so and so and the Department of Justice must follow up.

The accused doctors may keep their silk hats on. They may also reflect that labor unions and farmers may combine but physicians must not do that. They may remember, too, that there is a strong current in the New Deal toward socialism, including socialized medicine. Professor Arnold's lecture on the high cost of medical treatment should amuse at least one veteran practitioner of this town who had 130 calls in a recent month and collected a total of $3 for his pains.

But the Washington doctors may as well prepare to be indicted. Their lawyers can read to the jury some of Arnold's touching assurances of their lack of moral turpitude.

THE SOFT IMPEACHMENT

New York Herald Tribune, August 2

The nation is just getting itself adjusted to Mr. Thurman Arnold's novel method of antitrust prosecution by what might be called the soft impeachment. His recent announcement that he was setting out to enjoin the motion picture companies as violators of the law, but was doing so in only the most constructive and friendliest possible spirit, had much to recommend it; here at last, it seemed, was a way through which the antitrust laws might be made into really serviceable instruments of rational industrial regulation. But when Mr. Arnold suddenly extends the same polite constructivity into the nonindustrial problem of group medicine one is not, in the first moment of astonishment, quite so sure.

The implications of the proceeding are so remarkable as rather to overshadow the specific allegations of sabotage against the district medical society. To begin with, Mr. Arnold can scarcely have much confidence that a criminal prosecution would stick in the courts. There are various decisions to the effect that the prohibited restraint of "trade or commerce" must apply to goods or commodities, while the Clayton act specifically excludes the "labor of a human being" as an article of commerce. Surely, a doctor's laborious services could not easily be brought within the scope of the antitrust laws. But the Arnold method is not aimed at a court battle; it proposes rather to extort a consent decree without one.

The consent decree has been used before now to enforce, through the mere threat of prosecution, an extent of governmental regulation which the prosecution itself might fail to sustain. That aspect of Mr. Arnold's sweet reasonableness might not matter so much in the proper field of antitrust law, where there are always plenty of capable opposing counsel; but extended into the problems of medical practice it seems fraught with ominous possibilities.

And there are other peculiar things about this proposal to settle the complex social issues centering around medical care by the kindly intervention of the Department of Justice, with criminal charges and a grand jury investigation. Mr. Arnold himself notes, under the head of "economic results to be expected" that prosecution in the nation's capital will ensure "adequate publicity." (It could ensure little else: for, since medicine, if "commerce" at all, is certainly not interstate commerce, the federal law would operate only in the District of Columbia.) At a moment when the New Deal seems pretty hard put to it for popular issues next year and is clearly working up the health insurance question as a possible means of filling the gap, this device for showering "adequate publicity" upon the matter has an unpleasantly political connotation.

The Department of Justice, for all its excellences, is clearly not the appropriate agency for regulating American medicine. And if its new policy under Mr. Arnold is going to be bent to the use of political stratagem, it will cease to be an appropriate agency for regulating anything else.

NEW DEAL BUFFOONERY

Troy, N. Y., Times Record, August 2

There is something excruciatingly funny about the antics of New Dealers when somebody challenges their benevolent tyranny. In their own estimation, from the President down, they seem to believe honestly that they are the anointed of the Eternal, infallible in every detail, and therefore entitled to ignore law, courts, custom and all other conventions that civiliation erects for its own protection. If the courts are in the way, pack them. If laws oppose a plan, scrap them. If Congress refuses to act on such laws, twist them. If men question New Deal objectives, denounce them.

So the men who are directing the plastic intelligence of the President along radical lines toward collectivism have decided that cooperative medicine, at first voluntary and at last compulsory, must be introduced into the United States while the going is good. The Amer-

ican Medical Association does not approve it. In this attitude it has most of the nation behind it. So the A. M. A. decides to bar from its membership those who favor cooperative medicine—which it certainly has a right to do. Its position is precisely the same as any club which bars this or that group from its privileges; for a club is a voluntary association.

But the New Deal bunch are angry. So the word has gone out that the A. M. A. must be attacked by law. An injunction will be sought compelling it to admit to its membership the New Deal gang of doctors. In short, New Dealism proposes to force its way even into voluntary associations. The next step will be to insist that all newspapers publish all its lying handouts and be enjoined wherever they refuse.

There is no law for such compulsory breaking down of social preferences. Censorship cannot go thus far. The New Deal proposal is silly and tyrannous. It has in it not a single ingredient of honest Americanism. It is purely Russian—as are many of the New Dealers. The courts are not yet packed by the Roosevelt regime and there is not a chance that any such processes will win. But that such efforts should be made ought to be evidence enough of the program of repression and dictation which Washington intends to carry out if it can get the power into its hands.

NEW DEAL MEDICAL BLUFF

Indianapolis Star, August 2

The Justice Department apparently is acting under New Deal orders to use threats and coercion on the organized medical profession in an effort to further the schemes of so-called state medicine. The department has accused the medical association of alleged illegal activities against cooperative groups formed to lower the cost of medical care. One of its assistants said a preliminary investigation indicated possible violation of antitrust laws.

An honest difference of opinion exists among members of the medical profession, but nothing to date has justified the attempted interference of government agents, particularly on antitrust claims. Organized medical societies should be able to exercise majority rule in determination of policies deemed necessary for public and professional welfare. Some physicians affiliated with the cooperatives are said to have been excluded from Washington Hospitals. That reported condition in the District of Columbia does not justify blanket charges applying to all the profession.

The government's charges evidently were designed to intimidate the medical profession into acceptance of the socialistic spending contemplated by the New Deal health program. The President's advisory committee recently recommended expenditure of hundreds of millions on a national health program, which would extend governmental paternalism, impose an additional burden on the taxpayers and add to the list of residents who assume with some reason that the government will supply every need for the rest of their lives. State medicine makes almost inevitable a bogging down of professional standards which have contributed to the high plane of scientific progress.

It is true that many cannot pay for medical care. State and local clinics provide aid, much charity work is performed throughout the country and both medical and dental groups are sponsoring time-payment plans. Persons needing professional attention usually get it, regardless of financial circumstances. The socialistic schemes fostered at Washington, however, are training too many to believe they can become permanent wards of the taxpayers.

A CHARGE OF MONOPOLY

Philadelphia Public Ledger, August 2

Lately there have been several indications that certain federal authorities regard the representatives of organized medicine as enemies. Though admitting the "absence of moral turpitude," the Department of Justice is bringing criminal proceedings against the American Medical Association and the District of Columbia Medical Society, intending to prove that these organizations have violated the antitrust laws by interfering with the workings of a health association of government employees.

The medical groups, it is charged, have threatened expulsion and other disciplines for physicians supplying their services to the Group Health Associated, Ltd. It is implied that by doing so they are endeavoring to maintain a monopoly in medicine.

But the long-established rules and policies of organized medicine are mainly designed to defend its standards and codes of ethics. The medical profession is self-governing. And this, perhaps, is what the New Deal Administration doesn't like about the medical men. They are rebels against the policy of benevolent regimentation. They believe they can mind their own business better than Washington. By invoking the antitrust laws the government has gone a long way for a weapon against them.

APPLICATION OF THE ANTITRUST LAW TO REGULATION OF MEDICAL PRACTICE

Arizona Republic, August 2

What is this sacred thing, the Group Health Association, that it may not be flouted with impunity? Is it not a long step in the direction of complete regimentation which now seems to have been the aim of the brain trust at the beginning six years ago and, perhaps, would now be well under way but for the intervention of the Supreme Court against NRA? But in many and devious ways that objective is still being approached.

If a membership list of the Group Health Association were obtainable, we think we would find it was largely made up of adherents of the New Deal.

Steps in the name of the Group Health Association have already been put under way against the American Medical Association and the District of Columbus Medical Society as violators of the federal antitrust law. Perhaps if it could be shown that these organizations had encouraged their members to agree upon the fees to be charged by the profession, and that as a result of such encouragement uniform and exorbitant

fees prevailed, an action for violation of the Sherman antitrust act might lie.

But as we understand that is not the gravamen. Then what have the intended defendants done to call down upon them the wrath of the New Deal? They have been guilty of the sacrilegious act of speaking disrespectfully of the Group Health Association. They have signified that they want nothing of this association. They counsel the dissociation of their members from the group health physicians in the matter of consultation and hospitalization and other relations which are more or less private and personal. In short, they regard the health group idea as a form of heresy which should not be encouraged. That is, the head and front of the offending of the American Medical Association, a revolt against the New Deal.

The proposed action against the American Medical Association and the District of Columbia Society is quite similar to the proceedings of the National Labor Relations Board, whose interpretations of the Wagner Act are held to be sacred and not subject to questioning. It has thus become a crime to think evil of the rulings of the board.

It is the professed aim of the health group to provide medical and surgical aid for all who are in need of it. We have been making a gradual approach to that aim for many years, but the health group wants it done now, instanter. It is in that respect similar to nearly all New Deal projects, lacking in practicality.

We may suspect that the health group is more solicitous for the well-being of a class of physicians who for one reason or another have fallen short of professional success, than they are that none should be deprived of medical care. For this they would regiment the practice of medicine and establish it on a lower level than that to which it has been brought mainly through the efforts of the men who are now more vigorously opposing regimentation.

If it should happen as a result the action threatened by the department of justice that the practice of medicine should be shorn of its independence and freedom and all practitioners should be reduced as nearly as possible to a common level, it would be a sad day for the country. In their wildest dreams the most insane of radical socialists nearly fifty years ago when the Sherman law was enacted could not have supposed that it could ever be applied to such a scheme for regimentation.

They might, and no doubt did, have in mind complete socialization, but they could not have imagined that it would ever be reached through an antitrust law. Certainly congress never contemplated such a use of the Sherman act.

A NEW USE FOR ANTITRUST LAWS

Philadelphia Inquirer, August 2

Public interest in the antitrust suit which the Department of Justice is now bringing against the District of Columbia Medical Society and the American Medical Association will not be confined to Washington. The widespread adoption of plans for group hospitalization and medical care will focus national attention on this unprecedented action.

Thurman W. Arnold, Assistant Attorney General, charges the organizations of physicians with violating the antitrust laws in attempting to prevent the functioning of a local group health association composed of government employees. Specifically the medical societies are accused of threatening expulsion of their own members who accept employment from the health group and also their removal from staffs of affiliated hospitals.

This alleged procedure is termed by Mr. Arnold an illegal boycott of health group doctors. He charges that the associations are endeavoring to set up a virtual monopoly of the community's medical services.

In proceeding against professional nonprofit organizations, which are not concerned with prices or commodities and in the ordinary sense are incapable of operating in restraint of trade, the Department of Justice has entered a field commonly regarded as outside the scope of antitrust laws.

The Washington plan that has encountered opposition from medical societies differs from the group hospitalization plan recently adopted for Philadelphia with the cordial cooperation of organized medicine. In Washington a group has retained its own staff of physicians and operates its own clinic. Under the Philadelphia plan subscribers take out insurance against the cost of hospital accommodations and treatment.

Whatever the outcome in Washington, Philadelphia has reason to congratulate itself on the agreement recently concluded between the Associated Hospital Service and the County Medical Society that will mean so much to the health of this community.

A MEDICAL CONTROVERSY

Boston Post, August 2

The action of the Department of Justice in charging the American Medical Association with monopolistic practices in connection with the Washington Group Health Association, is indeed, a radical departure from accustomed procedure.

The Group Health Association is a mutual organization of government employees. It provides all medical care necessary for its members by payment of a small membership fee.

Doctors are hired by the year. They earn their complete living in this way. As far as can be ascertained, the plan is working very well for doctors and patients.

Now it is alleged that the A. M. A. and its affiliate, the District of Columbia Medical Society, is attempting to prevent the success of the association by using the following methods:

The first is threatening expulsion of doctors from the A. M. A. for working for the association. The second is threatening expulsion from the society of doctors who consult with the association. The third is threatening expulsion from Washington Hospitals of the association staff doctors.

It can be seen that the methods charged are underhanded, and, if proven, monopolistic indeed.

There is no question that there is a large element in the medical profession which opposes departure from the time-honored individualistic conception of medical practice. And also there is no question that, in this day of government interference in every walk of life, a socially minded government wants to put over a sweeping plan of nationalistic medicine, as it has put over farm plans, soil plans, flood plans, unemployment plans and electric power plans.

But before we make up our minds that the present action has dragged a raw situation into the light, in which the American Medical Association is attempting to hold up the public for high fees, it is well to scan the record.

The association for a number of years has protected the public against the quacks which sprout like fungi in the broad field of medicine.

There is no subject that the general public knows less about than bodily health.

Illegal practitioners have been winnowed down to a minimum; medical schools of the racket variety have been put out of business; standards of state medical examinations have been raised and fake cures and hospitals have been exposed.

The general standard of medicine is higher in this country than anywhere else on earth. And it has been the voluntary membership of the American Medical Association, a free and unsupervised society, which has done it.

Of course, there has been much complaint against the mandatory methods of the Association, exercised against individuals and in legislative halls. But the ultimate result of it all has been beneficial.

Consequently, the government's present move should not be prejudged until the facts are known.

CLUB FOR MEDICAL "TRADE"

Philadelphia Evening Bulletin, August 2

Anticipation that there would be something novel and spectacular in antitrust enforcement under Assistant Attorney General Thurman Arnold has been borne out. The proceedings just initiated against the American Medical Association and the District of Columbia Medical Society, intended to lead up to a Grand Jury investigation of the opposition to group medicine from the antitrust point of view, is a coup almost deserving the overworked adjective sensational.

The allegations charge an illegal boycott carried out through threats of exclusion from the District Medical Society, and the actual exclusion from Washington hospitals of physicians on the staff of the Group Health Association, Inc., an organization of government employees to provide themselves with prepaid medical care.

The Sherman Act and other antitrust legislation were expressly stated to be intended to prevent combinations in restraint of trade and commerce among the several states or with foreign nations. The "trust" aimed at was nothing vague or indefinite in the minds of those who pushed this legislation. The popular idea was well embodied in a noted cartoonist's conception of a pursy, bloated plutocrat in dollar-mark checked attire. There was accordingly considerable indignation when in the famous Danbury hatters case the Sherman Act was applied to a labor boycott. The Clayton Act of 1914 made the declaration that "the labor of a human being is not a commodity or article of commerce," and exempted from the operation of the antitrust statutes nonprofit labor and agricultural organizations not having capital stock.

Logically, professional skill and attainments would seem to be equally out of the class of commodities with which the antitrust statutes concern themselves. Of course, as there is no specific exemption in their case, it may be found that the law against restraint of trade applies to the practice of the medical profession. Mr. Arnold contends the law applies to "services" as well as goods.

The Arnold move will probably be widely popular with those who believe that opposition to group medicine and group hospitalization is short sighted on the part of the medical profession, and that if the war on group medicine in the District went to the length charged by the Attorney General the bounds of legitimate self defense were exceeded. But the fairness of the use of this particular club is open to question, especially as long as there are awaiting attention so many charges of violation of the antitrust laws by combinations they were supposedly intended primarily to cover. Such prosecutions would be more prosaic, but they come closer to the intent of the law as commonly understood.

MEDICAL MONOPOLY

Indianapolis News, August 2

An amazing interpretation of the federal antitrust laws is implied in the announcement of the United States department of justice that it is preparing to bring suits against the American Medical Association and other medical societies for violation of the antitrust laws. Coming so soon after the national health conference at Washington, at which differences of opinion between the American Medical Association and the federal administration were expressed, the inference is that the administration has resorted to the antitrust law suit device to bring pressure to bear upon the organized medical profession for approval of the administration public health plan. An assistant attorney general said in a statement accompanying announcement of the suits that the department would consider a consent decree in event that the defendants in the suits decide upon voluntary cooperation. This means, in effect, that the department will not prosecute if the defendants say that they will desist from alleged violation of the antitrust law.

The attorney general's office alleges, in the suit singled out for a test, that the American Medical Association and the Medical Society of the District of Columbia have attempted to prevent the functioning of the Group Health Association, Inc., of the District of Columbia. This is an organization of about 2,500 government employees. It collects dues from the members and, in return, provides them with medical attention and hospital services. The department of justice alleges that the Medical Society of the District of

Columbia has sought to dissuade its members from taking employment by this organization, that doctors who have taken this employment have found themselves barred from the staffs of Washington hospitals and that their professional liberty has been restricted by what the department of justice calls "organized medicine."

The medical profession has resisted such organizations as that named in the Washington complaint on the ground that they will result in inferior standards of medical service and will encourage the subservience of the medical profession to lay control under conditions which are strongly dominated by financial considerations. Some of these organizations are alleged to be formed primarily for the financial gain of the promoters. The department of justice does not seem to realize that in attacking medical societies as alleged monopolies it may be clearing the way for a monopoly of unusual danger because of its lay control. The case will be followed with interest because of its deep concern to the health of every one.

THE MEDICAL PROBE

Washington Evening Star, August 2

The Department of Justice, in announcing its proposal to initiate grand jury proceedings against the American Medical Association and the District of Columbia Medical Society, is relying on the assumption that the Sherman Act applies to a monopoly of professional services as well as monopoly of goods.

That is a novel proposition and a judicial determination of its validity should be welcomed by the medical profession as well as by the courts. The extent to which government can or should regulate the professional work of doctors is a highly debatable proposition, and the first step in resolving it is the ascertainment of how far, as a matter of law, the government can go in that direction.

If the courts uphold the right of regulation it will then be incumbent on the Department of Justice to prove that the members of the medical organizations have in fact combined to do the allegedly illegal acts. Until that proof is forthcoming the public should endeavor to keep an open mind on the question and not become prejudiced against a profession on the strength of charges yet to be substantiated.

The department has suggested that it would recommend withdrawal of the grand jury action if the doctors would agree to sign a suitable consent decree eliminating the allegedly illegal practices. That is a proper attitude for the government to take, provided the grand jury proceedings are in no sense used as a "club" to compel the signing of such a decree.

While it is not likely that the officials of the medical societies will look with favor on the signing of a decree, they should be free to decide that point without being subjected to pressure or promises. The issues here at stake are too important to permit the development of a situation like that in Milwaukee recently, when a federal judge dismissed a grand jury after it had voted Sherman Act indictments against some automobile finance companies because he thought the Justice Department officials had used the grand jury as a device to force acceptance of a consent decree.

MEDICINE AT CROSSROADS

Boston Herald, August 2

The whole question of assuring the American people of adequate medical care, which was discussed at length at the recent Washington conference, has suddenly been focused on one point by the action of Asst. Atty.-Gen. Thurman Arnold in formally accusing the American Medical Association and the District of Columbia Medical Society of violating the federal antitrust laws. It is safe to predict that the settlement of the case will probably influence the methods of the practice of medicine in the United States for years to come.

The facts, at least as Mr. Arnold presents them, are simple. The Group Health Association, Inc., was voluntarily organized a year ago by 2,500 small-salaried government employees to provide themselves with medical care for a small monthly fee. When the association attempted to retain competent physicians, it found that the District of Columbia Medical Society had threatened to expel any of its members who might enter into an agreement with the association. It also discovered that the society had forbidden its specialist members to consult with physicians employed by the association, and that it had prevailed on several Washington hospitals to refuse admittanse to the association's doctors. It is well known, as Mr. Arnold says, that the Washington episode is not unique, and that the medical societies have similarly opposed the organization of group medicine association and hospital insurance plans in several other cities.

If these ventures will inevitably lower the quality of medical care and the A. M. A. can demonstrate that certainty, it is on strong ground. Plainly we must not embark on any scheme which will impair existing medical standards. But if the A. M. A.'s objective is merely to freeze our present medical facilities into a state of permanence and to prevent the free and honest trial of new facilities, it is on exceedingly weak ground.

As it has been declared many times in recent years and as it now must be apparent to almost everybody, the very rich and the very poor today receive the best medical treatment. The rich can afford to engage the best physicians and surgeons. The poor can obtain free treatment—often from the same doctors—at a hospital or clinic. But the middle class, the people with incomes of from $1,000 to $2,500 a year, usually have great difficulty and frequently suffer real hardships in attempting to meet the cost of a serious illness. The group scheme offers them the opportunity of buying protection against the financial impositions of illness just as most of them now insure themselves against the loss of their homes by fire—through small monthly or yearly payments.

In reply to the antitrust charges, the A. M. A. has immediately revived the bogey of government regimentation and "socialized medicine." The essential point is that these voluntary, cooperative organizations—which nobody has to join unless he wants to—really

promise to obviate the need of government subsidy and regulation.

Public funds and private charity already take care of the poor sick. Our present objective should be to forestall the necessity of caring for the middle class sick in the same way. Certainly from the taxpayers' standpoint it is much more desirable to encourage 2,500 government employees in Washington—or any other group of citizens—to finance their own medical care through a cooperative arrangement than to deny them that right and invite them to seek public or private assistance whenever they fall ill.

Mr. Arnold was careful to state in his opinion that he is not accusing the members of the medical societies of a moral offense. Indeed, he invited them as "persons of distinction and good will" to cooperate in ending the impasse "so that there may be free and fair competition between the forms of organization and the older types of practice." It is to be hoped that the A. M. A.'s Chicago office will dismount from its high horse and join with the humble laity in a search for the just and intelligent course.

TRAUMA AND APPENDICITIS

Probably because trauma, next to cold, is associated in the minds of people with almost every disease, the first impulse of the surgeon is to reject the possibility as a cause of appendicitis. Deaver said that he had never seen a genuine case of traumatic appendicitis. John B. Murphy, however, as early as 1892, urged that trauma could be an exciting factor in appendicitis, and Howard Kelly claimed that traumatic appendicitis is more frequent than is commonly believed. He collected records of fifty cases, and Osler in his "Practice of Medicine" stated that "trauma plays a very definite role, and in a number of cases the symptoms have followed very closely a fall or a blow."

Three distinct opinions prevail. One categorically denies the existence of acute traumatic appendicitis and regards the occasional association of trauma with an attack of appendicitis as a coincidence. Another accepts the possibility of causal relationship but limits the role of injury to that of an activating factor bringing about an exacerbation in a previously diseased organ, denying at the same time that trauma per se is capable of originating an acute attack in a previously healthy appendix. Finally, there is the belief that traumatic appendicitis is a definite clinical entity. The latter opinion is gaining a wider recognition, both by the medical experts and by the courts, which in recent decisions have recognized traumatic appendicitis as a compensable cause under the laws governing industrial compensation.

The pertinent question is not whether trauma can originate an initial attack of appendicitis or whether its effect is that of lighting up dormant pathologic conditions. It is, rather, whether or not trauma can precipitate a clinical attack of acute appendicitis. The consensus is not only that it can, but that the resulting attack is likely to be one of a grave, destructive type, with a clear clinical picture. Usually, after a blow on the abdomen, a kick, a fall, or a sudden muscular strain, severe sharp abdominal pain occurs, followed by vomiting. The initial pain and vomiting are characteristic and are presumably due to intraperitoneal shock. Then, in most cases, as pointed out by Behan,[1] both symptoms cease and return later, as the result of progression of inflammatory changes within the abdomen. Rarely is there any evidence of bruising of the abdominal wall. There may be muscle rigidity and well localized tenderness over the right lower quadrant. Such a clinical picture should suggest the possibility of acute appendicitis. Procrastination is serious because of the severe destructive lesions characteristic of this entity.—*Jour. A. M. A.*, June 4, 1938.

1. Behan, R. J.: Traumatic Appendicitis, Ann. Surg. 65: 263 (Feb.) 1927.

THYROID HORMONE IN EAR IMPROVES HEARING OF SOME

The miracle of making the deaf hear has been at least partially wrought by injections into the ear of thyroxine, hormone secreted by the thyroid gland. Results of this method of treatment were reported by Dr. Max A. Goldstein of St. Louis, Mo., at the meeting of the American Laryngological, Rhinological and Otological Society.

The patients, 35 of them, were suffering from the chronic hereditary type of deafness known as otosclerosis. In this condition spongy bone forms in the capsule of the labyrinth of the ear. Dr. Goldstein injected the thyroxine into the middle ear.

Careful tests of the hearing were made with the audiometer before and after the treatment. Improvement in hearing after treatment ranged from 35% to 50%. In other words, while not cured completely of deafness, these patients recovered from one-third to one-half of their hearing.—*Science News-Letter.*

INJECTION TREATMENT OF HERNIA

The injection method, according to its modern advocates, is applicable only to hernias that can be completely reduced and kept reduced by means of a truss. Its use is contraindicated in irreducible hernias, in sliding hernias and in the presence of an undescended testis. Injections are further contraindicated in the presence of superficial skin infections or erosions caused by the truss, in syphilis, diabetes, senility or marked emaciation. Hernias with a wide ring are not likely to give a good result. The case best suited for the treatment is the small reducible, indirect inguinal hernia in a young person. The complicated hernias and the large hernias of the middle aged and the elderly are the least suited for the injection treatment. Anatomic conditions in a direct hernia, in the umbilical and the femoral hernia, make the injection treatment undesirable, in the opinion of many. Although in the hands of some investigators the results seem to have been good, the complications, the difficulty in selecting suitable cases, and the still uncertain percentage of recurrences would seem to make the method unsuitable except under circumstances in which unusually careful technic and suitable care are possible. (J. A. M. A., Oct. 30, 1937, p. 1456).

SUGGESTIONS ON PREPARING COPY

Writing a Craft and an Art

"It is a craft when practiced for the uses of daily life by persons of ordinary endowments; it is transformed into an art when to excellence of craftsmanship is added the formative principle that differentiates an art from a craft.

"It might be supposed that anyone who wished to write would know what he wished to write about. But many merely wish to write. To recommend that such a person choose a subject which he knows well is not so superfluous as it seems."

A Manual for Writers: Manley and Powers

"Accurate use of a large vocabulary of words clear and sharp in their meaning marks the scholarly writer."

The Writing of Medical Papers: Mellish

A medical editor welcomes copy on new discoveries or novel applications of old principles when presented in attractive form. It therefore behooves the writer to limit his subject closely, to take time to condense and polish the text, verify the statistics, illustrations and tabular matter and present his ideas in a form to appeal to the reader.

Medical literature is accumulating at such an enormous rate that it is comparable to the astronomer's theory of the "Expanding Universe." To add to the mass, unless the contribution is novel and well presented, is a liability rather than an asset.

Following the publication of "Observations on Copy" two years ago there was some improvement in the paper prepared for the annual meeting and the suggestions are revised and repeated at this time in the hope that they may again be useful in the preparation of papers.

Much time, labor and expense on the part of writers, editors, printers and others can be saved by compliance with these suggestions.

Titles of articles should be brief and explicit. Otherwise they cannot be readily located in the Index Medicus and the author loses the advantage of that excellent publicity.

Paper and Style: All copy should be submitted on standard size white paper, 8½x11 inches and *double spaced throughout.* Page to be blank 1½ inch top and left side; inch on bottom and right side. *Copy to be original.* (Author keeps a carbon copy.)

Pages Numbered: All pages including tables, legends and bibliography, to be numbered consecutively. Also all illustrations to be numbered and marked "top" and have author's name on back.

Title, author: Title of paper, author's name and city address should appear in order stated at top of first page; author's street address at end of article.

The contents of paper should be in the best possible style and turned over to the official reporter with the distinct understanding that proof will be submitted to authors for the correction of *typographical errors only.* If changes from copy are desired they will be made at *author's expense.*

Spelling: Spelling as in Stedman's Medical Dictionary is considered standard. He does not recognize such barbarisms as oedema which he calls "variant," nor have we adopted the short form of though, thorough, etc., even if some lexicographers have.

Abbreviations not in dictionaries should not be used except in tables with explanatory footnotes.

Words Often Misspelled

abscess
anemia
anastomosis
anesthesia
benefited
bactericidal
calcareous
carcinoma
caseous
desiccate
diphtheria
dyspnea
edema
esophagus
goiter
hemorrhage
Hippocratic
inflamed
inflammation
inoculation
myxedema
per cent. (2 words with period)
preventive
septicemia
smallpox
syphilis
thorough
though
through
tonsillitis
tryparsamide
x-ray

Numbers under 10 to be spelled out; over 10, use Arabic numerals.

Compound Words: Many medical terms formerly written separately or hyphenated are now run together as in German, which has a certain scientific advantage however cacaphonous the sound. Recent editions of both Dorland and Stedman have pharyngomaxillary and sternocleidomastoid which were formerly hyphenated.

Stedman writes all gastro compounds without hyphens. Funk & Wagnall's Standard uses hyphens, indicating that medical practice follows the German style more closely.

Capitalization: No capitals unless proper name or beginning a sentence: thus doctor, physician, dentist, pediatrician.

Names of diseases and medicines not capitalized unless named for a *person.*

X-ray not capitalized unless beginning a sentence.

Titles of articles when referred to *in the article* are not capitalized, or if capitalized should be in quotes.

Illustrations: All cuts required for illustration are furnished at *author's expense.* Clear photographs and wash drawings can be reproduced in halftone cuts; line drawings in zinc etchings. Minimum size halftones cost about $3 each; minimum etchings about $2. *Negatives* of radiograms, either glass or film, are not acceptable; *prints* should be submitted.

Bibliography: References to literature should appear in numerical order in the text and the bibliography should be collected at end of article with the same numbered references. It is rarely necessary to write names of medical journals in full. (J. A. M. A.)

Since 1927 the Index Medicus has maintained a uniform standard of references which answers every requirement of brevity, uniformity and accuracy that makes it the supreme arbiter in this field. This system was directed to our attention by Mr. Alfred L. Robert, medical librarian of Columbia University, and we have redacted copy recently submitted to the Journal in accordance with this plan. This was facilitated by the cooperation of the staff of the Crerar library.

If authors will follow this system from this date it will save extra work for all concerned.

The example quoted by Mr. Robert was taken from February (1934) Illinois Medical Journal as follows:

"Ford, H. L., Deep neck infection—surgical approach, Illinois M. J. 65: 117-128, 1934."

It will be noted that this contains the author's name and initials, title of paper, name of journal abbreviated, volume number in *Arabic numerals,* pages, *first and last,* and year.

The data include everything necessary to locate the article in a library with nothing superfluous.

Similarly *quotations from books* should contain the author's name, title of book, place of publication, publisher's name, year and pages.

Arabic numerals are specified instead of Roman as they are more familiar and less liable to error in copying.

Phony Locutions: "He operated six cases; others were unoperated." It seems incredible that any physician or surgeon could be guilty of such a sentence, but unfortunately it is not so uncommon. Others "operate" patients. Why not operate "in" the case or "on" the patient.

The following quotation from Stedman's Medical Dictionary may clarify this usage:

"*Case* (kās) (L. casus, an occurrence). An instance of disease with its attending circumstances. The patient is not the case; the *patient* dies or recovers, the *case* terminates fatally or ends in recovery; the surgeon operates *in* a case, but operates *on* the patient."

Smith, Brown, etc. Why not Smith, Brown, et al.?

"Cases in whom" should be cases in which, but "patient in whom" is correct.

We quote below the excellent summary of language to avoid from the Journal of the Medical Association of Georgia:

REPREHENSIBLE MEDICAL ENGLISH

Twelve Valuable Points in the Language of Medicine

1. "Case" must not be used for "patient," nor "cure" for "treatment."
2. "Tubercular" means "nodular"; "tuberculous" means "infected with the bacillus of tuberculosis."
3. "Cystoscope" is a noun and must not be used as any other part of speech.
4. It is possible to "operate a cotton-gin," *but it is not possible to "operate a patient"—nor his appendix.*
5. "Acute appendicitis" is common, but an appendix cannot be "acute."
6. "Acute abdomen" is beyond the pale.
7. "Pathology" means the "science of disease"; it is therefore absurd to speak of "pathology in the right lung."
8. "Positive serology" is the worst type of jargon: apparently "positive Wassermann reaction" is usually meant.
9. "Specific" and "luetic" are convenient to obscure meaning from patients' relatives, but "syphilitic" is better in writing for the medical profession.
10. It is incorrect to say the patient had "no temperature." One may say that there was "no elevation of temperature," but it is shorter to say there was "no fever."
11. "Shot" is perhaps the most abused and overworked word in medical literature. Shot is of lead.
12. Bad spelling is unpardonable, so a good dictionary is indispensable.

MEDICAL ECONOMICS

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During the past month the subjects of medical care in the United States and Health Insurance have held the center of the attention of the newspapers, the monthly magazines, both lay and professional, as well as the public in general. The public have had brought to them in a most spectacular manner the subject of Health Insurance. To be sure they know little about the subject and those in charge of the propaganda have been careful to avoid going into the details of either the need of such a plan or the exact nature of it. They have whetted the appetite and interest of the public by newspaper publicity in which they are trying the case before any definite charge is being brought against the medical profession. And we must admit that they have succeeded in interesting the laity as well as the medical profession, even though the nature of the interest is entirely different in the two cases. On the desk of the writer are three requests for speakers on the subject of health insurance from very different organizations, a service club, a women's club and a county medical society. It goes without saying that all of these requests must be complied with because each gives an opportunity to present the truth about health insurance and to answer some of the implications in the clever propaganda emanating from those wishing to make a change in the nature of medical care.

It has been impossible for any individual to read all of the articles and editorials appearing in the press and magazines the past month. As a whole we feel that the editorial comment has been most fair, and that the majority of the same has been favorable to the present method of conducting the practice of medicine. We hope that all of you have read the comments, editorials and reprints appearing in the J. A. M. A. weekly. If you have failed to do so up to this time, please get out the last fiive or six and read them carefully. Especially read the reprint from the *Chicago Tribune* of August 2, 1938. It is both interesting and instructive and coming from the *Tribune* it is as welcome as unusual.

Medical Economics, the much discussed monthly magazine sent free to every physician in the United States, has an excellent article in the August issue on Page 32 on "Health Insurance, the Unknown." This magazine has always been opposed to State Medicine and this editorial is most timely and presents a different manner of explaining some of the apparent discrepancies in the multiple polls being conducted by various agencies on the demand for health insurance. It would be interesting to know who pays for these surveys. The various interpretations of such surveys show how dangerous figures can become in the hand of both friends and enemies. Paid propagandists can twist any poll figures to their desires. Any physician requested to fill out a questionnaire should be most careful in complying with the demand and in the event he decided to do so, should be doubly careful in the figures furnished and the opinions expressed.

The July issue of *Modern Medicine* presents on page 52 the results of a survey made last Spring in which 16,711 physicians answered a questionnaire and expressed an opinion in regard to Socialized Medicine. We hope that all of you have found time to read this article. It is well presented and gives data by states, years of practice and type of practice. Without making any effort to summarize the results, which can be read easily in half an hour by those who are really interested in the subject, the outstanding fact is that two-thirds of the replies received from practicing physicians were opposed to the socialization of medicine. It is interesting to note that the greatest demand for the socialization of medicine, and of reform medical practice came from New York City. Some of

the same questions asked by the A. M. A. in its questionnaire are to be found in this one.

Victor News of August, 1938, presents a concise resume of the proposals of the National Health Conference held in Washington last month. Those members of the medical profession having this paper can read with great profit the article on the first page on this subject. It gives most of the pertinent facts presented at the Conference, upon some of which the action of the government is threatened and will probably serve as the basis of the attempt in the coming meeting of Congress to begin some sort of Health Insurance. In a recent speech the head of the government promised an expansion of the Social Security program and hinted that it might include medical care.

The writer was greatly disappointed that an article prepared for this column last month was omitted due to a misunderstanding between the writer and the editorial staff aided by poor postal delivery. We are going to print the same this month even though it may be a little stale by this time, because we feel that it is by far the best article on the subject that has come to our attention. Also it has served as the basis of a series of opinions from many individuals, both in and out of the profession, which have been published in the *United States News* the past month. This symposium has been on the following questions:

1. Is there need for reform in the system of medical care now available in this country?

2. If reform is needed, should it take the form of compulsory health insurance as a part of a Social Security System?

3. Or should reform be based purely upon voluntary group insurance methods under control of the medical profession itself?

4. If voluntary group insurance is considered inadequate, would a tax-supported system of insurance providing care for major illnesses and hospitalization be favored?

Many of the answers received evaded the questions asked and expressed personal views on some of the questions or on other questions. However the majority answered to the best of their ability and gave frank opinions. A brief resume of these letters gave the following interesting facts. Condensing the question as to whether or not they were in favor of a drastic change in the manner of conducting the practice of medicine, and then dividing the source of the letters into different groups according to professions, the following was found.

Ten out of eighteen physicians, actively practicing, were opposed to any change, four favored some change and four were noncommital.

Two educators were in favor of a change.

Three government officials were in favor of change, one opposed and one noncommital.

Two social service workers were undecided.

One editor was opposed, one in favor and two noncommital.

Two judges were in favor of change.

One clergyman was opposed.

All ten of the letters from organized labor, regardless of the nature, were in favor of a change. All wanted the cost to be borne by the government and the employer.

One of the best letters was that of Myron Weiss, Associate Editor of *Time Newsweek Magazine,* and I will take the liberty of repeating the final paragraph: "There is no need for new forms of tax-supported insurance to be developed. Practically every U. S. Community has tax supported methods of taking care of its helpless members or can develop such means. Let each man try to stand on his own feet. If we collectively make him prop himself up with tax supported insurance, the arches of his character are bound to weaken."

An editorial comment from the same paper on August 8 is as follows: "The government's threat of anti-trust proceedings against organized medicine causes a spirited discussion in the newspapers which are almost equally divided on the basic question—monopoly. Nearly all of the commenting editors agree that the medical societies should have power to enforce ethical standards, but some editors declare that such societies have encroached on the economic rights of individual physicians unfairly. Others insist that ethical standards cannot be enforced unless physicians are held to some uniformity in regard to remuneration and fees.

The proposed Federal Anti-Trust investigation arises primarily out of "voluntary" insurance plans involving the employment of "contract" doctors by "corporations." Commenting newspapers, delving into the roots of the controversy,

divide about equally in their stand. About half favor "socialized medicine, health insurance assisted by Federal taxation; the others insist such plans would prove futile because of the enormous expense involved."

From the above it is evident that the question is both far from being understood and settled. It is encouraging to know that so high a percentage of the editors are at least favorably disposed toward the medical profession. Their aid in this problem is of the highest importance and value to the medical profession, for they mold public opinion to the greatest extent of any medium in the United States, not forgetting the radio with its bedtime stories.

The approach of election of a United States Senator and Representatives in Congress from every district in Illinois in November should stimulate every member of the profession to insist on knowing the exact stand of the candidate on this important problem of the medical profession—*State Medicine*. We should find out by looking up the record of any of those who are running for reelection and try to get a written expression of opinion from all the candidates. Failure on the part of any candidate to make his position clear can only be interpreted that he is in favor of the proposal. In that case, it would seem that the members of the medical profession should oppose his election, regardless of the party label under which he is running. The future of the practice is of more importance to the medical profession of Illinois than the political affiliations of any candidate. We realize that promises are often broken, but when a candidate promises definitely, as we should try to get him to do, it is a little harder to explain failure to keep his word than it is to line him up after his election for two or six years. These are trying times and the medical profession would do well to take a lesson from the results attained by groups and blocs in the last few congresses. We must stand together and elect those who will aid us in our fight for the survival of what we believe to be best for the people of the United States. It is no disgrace to be defeated when fighting for the right. But to take it on the chin without standing up for the right is neither to be understood or condoned.

E. S. Hamilton.

"SUBSIDIZED HEALTH"

Federal vs. Private Medicine

With strokes as deft as a surgeon, the National Health Conference, which has just met in Washington for a three day conference at the behest of President Roosevelt, bared for the nation the issue of continued private medical practice versus the so-called "Federalization" of medcine.

The national health program, recommended by the Technical Committee on Medical Care to the President's Interdepartmental Committee to Coordinate Health and Welfare Activities, offered a detailed survey of the deficiencies of present health services and called for increased Federal, State and local government expenditures to combat disease.

But the one issue which seemed to hold the most attention of the delegates to the conference was subsidized health.

With the 300 medical, labor, farm, social work and civic leaders split into two camps, one group led by the American Medical Association, fought for continued recognition of the present private practitioner, cash-payment and charity system; the other led by "rebel" A. M. A. members, labor and other organized groups, fought for the recognition of "State" medicine.

In such a controversial forum, the mammoth $8,500,000,000 ten-year health program recommended by Government was relegated to the comparative quiet of future committees and discussion groups.

In essence the two major viewpoints represented at the conference were as follows:

1. Represented by Dr. Morris Fishbein, editor of the *Journal of the American Medical Association,* which in general contended that necessary medical services to the public could be rendered through public and private clinics, medical associations and charity work.

2. Representatives of organized labor and social work groups, which in general contended that only direct Government assistance could provide "adequate" medical service to the economically depressed body of the nation.

In a message to the conference, President Roosevelt said in part:

"We cannot do all at once everything that we should do. But we can advance more surely if

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we have before us a comprehensive, long-range program, providing for the most efficient cooperation of Federal, State and local governments, voluntary agencies, professional groups, mediums of public information and individual citizens. . . ."

Here is how the President's committee would set up the recommended $850,000,000-a-year front line defense against disease:

1. An additional maximum annual expenditure of $250,000,000 for strengthening the public health services, combating tuberculosis, venereal disease, malaria, pneumonia and cancer, and furthering mental and industrial hygiene.

2. An additional maximum annual expenditure of $165,000,000 for expansion of maternal and child health services, as follows: care for mothers and newborn infants, $95,000,000; medical care for children, $60,000,000; services for crippled children, $10,000,000.

3. A ten-year program providing for 360,000 additional beds in mental, tuberculosis and general hospitals, and the construction of 500 health and diagnostic centers in areas inaccessible to hospitals. Total annual cost over a ten-year period estimated at $146,000,000.

4. Asserting that one-third of the population is without adequate medical care, the committee recommended that the Federal Government, through grants to States, help provide medical care for those already aided through the Social Security Act and those who are self-supporting but need medical care. It was proposed that this phase of the program begin with $50,000,000 in the first year and expand to a $400,000,000 maximum.

5. A comprehensive program to increase and improve medical services for the entire population, financed by general taxation or special assessments and specific insurance contributions from potential beneficiaries.

6. Establishment of a temporary disability insurance against loss of wages during sickness.

However, it was the subject of "socialized medicine" and general trends in that direction, which occupied the thoughts of most of the delegates to the conference.

Dr. Fishbein, recognizing the medical needs "dramatized" at the conference, raised the question whether the program put forth would work. It was "not fair," he declared, to say that medical care was the most important problem facing the nation. In that, he took issue with the hub of the conference's intent. What the American people need, he asserted, are "food, fuel, clothing, shelter and a job with an adequate wage." Given those, he added, medical care would take care of itself.

From Dr. Robert Osgood, professor emeritus of the Harvard University School of Medicine, came this gentle warning:

"Some of us have felt that neither the leaders of the association (A. M. A.) nor the rank and file of its members have realized until recently the seriousness of the medical care situation of our country nor the challenge which organized medicine would be forced to meet. . . . Government and the public must help us. But if they try to take away such independence of action of the physicians as is dictated by their consciences we as physicians will fail them."

It was in an atmosphere of tense expectation then that Government spokesmen gingerly put forth their plan for a national health insurance system. Chairman Arthur J. Altmeyer of the Social Security Board, presiding, remarked "we have the feeling of embarking on an uncharted ocean in a rowboat without oars and with a compass that sticks."

At this point one delegate, aware of the analogy, remarked in an aside to a neighbor, "But Corrigan got to Ireland with a compass that stuck."

The plan as outlined by Dr. I. S. Falk, Social Security Board Consultant and a member of the Technical Committee on Medical Care, took as its thesis the point that "Government must assume larger responsibilities than it has carried in the past if it is to help self-supporting people meet the problems of medical costs."

If effective medical services are to become a reality, Dr. Falk pointed out, "people of small means must be able to obtain these services without facing the costs at the time the services are needed.

"Between the individuals or institutions equipped to serve the sick and the millions of people in need of their services stand barriers," he said, "the most important of which is an economic wall which both groups are anxious to scale."

Here is how that "economic wall" may be surmounted as viewed by the President's Committee with Dr. Falk as commentator:

Adequate medical care, purchased on an individual basis at a minimum rate, would cost on an average $76 a person a year. Costs of adequate medical and dental care through organized services to groups are estimated to be approximately $25 a person a year. The Committee declared:

"If medical care is to be made available to all families with small or modest incomes at costs they can afford, the costs must be spread among groups of people and over periods of time."

The Committee also pointed out that ". . . every sound arrangement to reduce the burdens created by variable sickness costs to the public operates to stabilize and increase the incomes of those who furnish the services."

Distribution of medical costs, the report continued, may be effected through taxation to support programs of public medical care or through insurance or through a combination of the two methods. Tax-supported public medical services now involve annual expenditures of about $500,000,000 to $600,000,000.

"A comprehensive system of health insurance, if considered as an alternative to tax-supported services," the committee declared, "would call for total funds equal to 4 or 4½ per cent. of income of the covered population, obtained from the direct contributions of insured persons with assistance from employers and Governments. Costs of health insurance do not represent new expenditures, it was stated, since the over-all cost is substantially what is already spent by individuals . . . health insurance would be primarily a method of substituting average for variable costs."

The Committee recommended that choice between public medical services and health insurance or combinations of these two methods be made by the States after careful consideration of the circumstances within a State, the types of service needed and existing resources.

In discussing its recommendations for Federal Action to develop programs of disability compensation, the Committee reported that on every average day from five to six millions are temporarily or permanently disabled by illness.

"Temporary disability," it was pointed out, "is much like temporary unemployment. Insurance against temporary disablement may be patterned after unemployment compensation, with repetitive registration at an employment office."

Observers were in general agreement at the close of the conference, that the coming Session of Congress would once again become a battleground for social objectives—this time a far flung health campaign buttressed by Federal funds and a widespread health insurance program, in general patterned on the lines outlined above.

Correspondence

MEDICINE FOR THE UNDER-PRIVILEGED

Chicago, August 15, 1938.

To the Editor: The only thing gained by altering the present medical set-up is a feeling of good-will among the ignorant for the politician, who again, theoretically, is promising them something for nothing.

The reason for the unnecessary deaths so often quoted is the lack of proper medical attention. Medical care is lacking in any given case because they do not apply for it. They do not apply for it because of ignorance, superstition, religion, or false pride.

Radio programs are arranged for an audience with a mental age of 12 years. Fan mail increases as the quality of the program decreases.

The ignorant are gullible. They believe anyone who has a pleasant smile and an attitude of sympathy. Scientific medical attention is rejected and the sympathetic cultist, who promises the most, takes over the case.

The superstitious consults the stars and is advised, for a fee, to rub his "warts" with a penny and throw the penny over his left shoulder. Months later his "wart" is found to be a metastasized skin cancer.

The religious extends his blind faith in the metaphysical into the physical—considering it sacriligious to interfere by either preventing disease or taking physical measures to cure it, when it is a reality.

False pride is amply demonstrated by the proud male who beats his chest and proclaims that Physical Culture is the thing and that doctors are only for weaklings. Then when a gnawing pain develops in the pit of his stomach, he is ashamed to go to find out what is wrong until it is too late.

Then there is the proud sophisticate, who

would not see any doctor except the well-known specialist that her neighbor brags of consulting —and she cannot afford the high fee her neighbor falsely claims she has paid.

If we wish by law to stop unnecessary deaths, then:

1. Disband all cults.
2. Compel everyone to submit to all prophylaxis known, such as vaccination and diphtheria injections.
3. Make it a criminal offense to be ill and not consult a physician.
4. Cease licensing unqualified physicians for a fee.
5. Compel physicians to do postgraduate study every 5 years.

J. Ernest Breed, M. D.

SUGGESTIONS TO ORGANIZED MEDICINE

August 15, 1938.

To the Editor: Judging by the present signs and symptoms, the disease of social uplifting at the "headquarters," will be not be allowed, by the interested elements, to get weaker, or be abated, when the congress meets next winter. Therefore we should think of the coming elections, when the candidates for both Houses of that legislative body will be available between now and the first part of November.

I was wondering, for quite a while, why the membership of organized medicine should not consider it worth while to get into closer contact with these candidates, by inviting them to the meetings of the county medical societies in this State, and all of the 48 States as well. Surely such a personal contact would be much more effective than all the telegrams sent in to these gentlemen at the time when the "house is on fire." Why not practice the well known fact, that prevention is much better and easier to apply, than cure.

The medical profession at large, up to this time, shunned the so-called politics and politicians, but it cannot be said that the opposite is true. If we have had a fair number of our membership in congress, during the last several decades, our cause would be, no doubt, considered from a different point of view. In contrast to this, the best example is the profession of law. We don't hear about investigation of the American Bar Association. Not much danger there.

Therefore, it seems to be high time to wake up and do a little preventive or missionary work, if you please, in this field. The time is ripe and the opportunity is here. With the apparent turmoil and topsy-turvy conditions in the ranks of the majority party at the present time, I believe that great good could be accomplished during the next two months. I can't see any reason why all of the gentlemen to be elected to congress next November, should not have an opportunity to hear our side of the story. There is no question, that they hear enough, and more than enough, from the opposite side.

We all know, that the campaign to socialize medicine in this country is in full swing at the present time. The interested elements are working overtime to reach the goal. Therefore it seems to be no time to think, or say, that it is the duty of the State, or the National Medical Society to do something in this direction. It is up to the rank and file NOW to take active part in the struggle. And I mean now, not next year, or two years from now. Then it may be too late.

F. J. Maciejewski, M. D.
Pres. LaSalle County Med. Soc.

EDUCATIONAL COMMITTEE REPORT

June, July, August, 1938

AMERICAN MEDICAL ASSOCIATION:

The exhibit of the Educational Committee created much favorable comment during the A.M.A. meeting. Officers from many states visited the exhibit and were interested in hearing about the Illinois program. Samples of material which included press releases, lists of scientific programs and speakers, copies of radio talks, suggested topics for lay meetings, were depleted after the first three days of the exhibits.

The Committee has been invited to present its exhibit at the Annual Meeting of the American Dental Association, St. Louis, week of October 23rd.

MATERNAL WELFARE PROGRAMS:

The Committee cooperated with the county maternal welfare committees in securing speakers for public meetings and in giving publicity to these programs. Assistance of Parent Teacher Associations and women's clubs in the localities was sought.

The office has cooperated in arranging post-graduate courses in obstetrics and pediatrics for six groups of medical societies. These programs will be completed before the first of the year.

The office assisted the chairman of the Maternal Welfare Committee with special letters to secretaries and in preparing copies of the annual report of that Committee.

Secretary attended meeting of Maternal Welfare Committee in July.

HAY FEVER:

The Allergy Society worked with the Educational Committee in arranging an exhibit for the window at Marshall Field & Co. Mr. Durham of the Abbott Laboratories, Dr. Harry L. Huber and the Weather Bureau furnished the material for the display on HAY FEVER.

Secured cooperation of Chicago newspapers in carrying the daily pollen count furnished by the Allergy Society.

Special articles released to newspapers on the subject of hay fever.

COOPERATION WITH LAY ORGANIZATIONS:

Special material outlining services of Educational Committee available to women's clubs, prepared for the Public Health Chairman of the Illinois Federation of Women's Clubs. Copies of this outline are being sent to five hundred individual clubs of Illinois.

Letters, offering services of the Speakers' Bureau, were sent to lay organizations.

Suggested popular health topics for Handbook of the Chicago Community Forum Service.

500—Copies of the reprint "A Lawyer Looks at Socialized Medicine" sent to prominent laymen of Illinois.

Magazine CURRENT IDEAS asked the Committee to secure three popular health articles for publication. Due to lack of time, only one article was furnished this magazine.

MEDICAL ORGANIZATIONS:

Letters sent to Illinois hospitals offering to furnish them with material for their bulletin boards. Out of 120 hospitals, 110 requested they be sent this material regularly.

Material was furnished the director of medical programs of radio station WILL in Urbana.

Copies of radio talks were furnished Danville, Rockford, Decatur, Bloomington, East St. Louis, Springfield.

Information concerning the functioning of our Speakers' Bureau sent to Executive Secretary of the Cincinnati Academy of Medicine.

Information about the complete set-up of the Educational Committee furnished California Medical Society.

95—Notices mailed for Effingham County Medical Society.

300—Notices mailed for Whiteside County Medical Society.

157—Notices mailed for Randolph County Medical Society.

262—Notices mailed for LaSalle County Maternal Welfare Meeting.

505—Notices mailed for 1st Councilor District Meeting.

174—Notices mailed for Franklin County Medical Society.

181—Notices mailed for Union County Medical Society.

217—Notices mailed for Madison County Medical Society.

216—Notices mailed for Shelby County Medical Society.

150—Notices mailed for DeWitt County Medical Society.

FIELD'S WINDOW:

Three displays were presented during the summer,
"Hobbies and Health"
"Popular Medical Fallacies"
"Hay Fever"

SCIENTIFIC SERVICE COMMITTEE:

Letter sent to secretaries and presidents of all county medical societies offering services of the Scientific Service Committee in arranging individual programs or series of programs and practical clinics.

Programs arranged for DuPage, Schuyler, Champaign, Madison, Kane, Effingham, Marion, Montgomery, Lee-Whiteside, Rockford, and Randolph County Medical Societies.

Offered a special "Obstetric and Pediatric Interview" to Henry County Medical Society for September. Letters were sent to 450 physicians asking them to send in questions they might like to have presented in these two fields. These questions were turned over to the speakers who will build the program around them, thus giving the doctors the practical information they want.

SPEAKERS' BUREAU:

27—Speaking appointments during summer months as follows:

Rotary Club—Charleston—Socialized Medicine.

Lay meeting—Schuyler County, Rushville—"Prenatal Care."

Kiwanis Club—Danville—Maternal Welfare.

Lay meeting—Ridgway—Prenatal Care.

Lay meeting—Viola—Prenatal Care.

Lay meeting—New Windsor—Maternal Welfare.

Kiwanis Club—Clinton—Syphilis.

Farm Youth—Princeton—Good Health.

Lay group—Alton—Maternal Welfare.

Lay meeting—Benton—Maternal Welfare.

Lay meeting—Shelbyville—Maternal Welfare.

Rotary Club—Wilmington—The Man Past Forty.

Lay meeting—Anna—Maternal Welfare.

Household Science Club—Mineral—Medical Fallacies.

Lay meeting—Clinton—Maternal Welfare.

Kiwanis Club—Freeport—Medical Fallacies.

Lions Club—Fisher—Rabies.

Parent Education Group—Chicago—Happy Childhood.

Rotary Club—Casey—Socialized Medicine.

Knife & Fork Club—Naperville—Socialized Medicine (2 speakers).

Rotary Club—Freeport—Life Line Versus Waist Line.

Rotary Club—Staunton—Socialized Medicine.

Kiwanis Club—Danville—Medical Fallacies.

Civic League—Bunker Hill—Cancer.

Kiwanis Club—El Paso—Good Health.

Neighborhood Club—Chicago—Sanitation.

RADIO PROGRAMS:

Three programs every week during the summer months over stations WJJD and WAAF—total of 39 programs covering 6½ hours of time.

The Secretary had a conference with the Public Relations Director of Radio Station WJJD and drew up some plans for future programs over this station which will be submitted to the Educational Committee at the next meeting.

He stated that they had always appreciated the splendid cooperation of the Illinois State Medical Society and had no complaints to make—which they had of most other groups who were given time for educational programs. He hopes that with the aid of the Educational Committee the two weekly health programs may become the outstanding feature of that station.

PRESS RELEASES:

60—Monthly health columns to newspapers.
1,144—Weekly health columns to Illinois papers.
187—Releases to Chicago papers.
1,560—Editorial articles to Illinois papers.
48—Releases Logan County Maternal Welfare Meeting.
40—Releases DeWitt County Maternal Welfare Meeting.
49—Releases 1st Councilor District Meeting.
42—Releases Madison County Maternal Welfare Meeting.
35—Releases Shelby County Maternal Welfare Meeting.
16—Releases Union County Maternal Welfare Meeting.
24—Releases Franklin County Maternal Welfare Meeting.
50—Releases Whiteside County Medical Meeting.
11—Releases Effingham County Medical Meeting.
Articles written and approved on
Pallor or Tan.
Night Blindness.
Dog Days.
Hay Fever Time.
Summer Duties.
A Health Service Inventory.
Baby in Summer Time.
Can Hay Fever Be Eradicated.
Do You Know About Typhoid?
The Healthy Child.
Undulant Fever.
How Is Their Vision?
Safety-First!
Autopsy or Postmortem Examination.
Hot Weather Hygiene.
The Bronchoscope.
The Honor Roll.
Appendicitis.
"Winter Complaint."

SPECIAL MAILING LIST:

8,406—Releases to Home Advisers, Health Chairmen, W.P.A. Teachers, schools, Red Cross, etc.
1,560—Releases to public libraries.
550—Releases to hospitals.
500—Releases on State Medicine.
Jean McArthur.

INTERNATIONAL MEDICAL ASSEMBLY INTER-STATE POSTGRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA

October 31, *November* 1, 2, 3, 4, 1938

PHILADELPHIA, PENNSYLVANIA

PROGRAM

Monday, October 31

8:00 A. M.

Diagnostic Clinic: Acute Coronary Occlusion.
Dr. G. Harlan Wells, Professor and Head of the Department of Medicine, Hahnemann Medical College and Hospital of Philadelphia, Philadelphia, Pennsylvania.

Diagnostic Clinic: The Significance of Low Back Pain.
Dr. Frank R. Ober, Assistant Dean and John B. and Buckminister Brown, Clinical Professor of Orthopedic Surgery, Harvard University Medical School, Boston, Massachusetts; Professor of Orthopedic Surgery, University of Vermont Medical School, Burlington, Vermont.

Diagnostic Clinic: Present Status of the Treatment of Hirschprung's Disease.
Dr. Fred Rankin, Lexington, Kentucky.

Intermission for Review of Exhibits

Diagnostic Clinic: Hydronephrosis.
Dr. Herman L. Kretschmer, Clinical Professor of Surgery (Genito-Urinary), Rush Medical College, University of Chicago, Chicago, Illinois.

Diagnostic Clinic: The Significance of Jaundice.
Dr. Henry A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard University Medical School, Boston, Massachusetts.

NOON INTERMISSION

1:00 P. M.

Chalk Talk: Trauma of the Larynx.
Dr. Chevalier Jackson, Honorary Professor of Broncho-Esophagology, Temple University School of Medicine, Philadelphia, Pennsylvania.

Diagnostic Clinic: Postoperative Complications.
Dr. Elliott C. Cutler, Moseley Professor of Surgery, Harvard University Medical School, Boston, Massachusetts.

Diagnostic Clinic: The Treatment of Anemia.
Dr. Russell L. Haden, Cleveland Clinic, Cleveland, Ohio.

Address: Practical Thyroid and Pituitary Therapy in Problems of Aberrant Growth and Development.
Dr. E. Kost Shelton, Associate Clinical Professor of Medicine, University of Southern California School of Medicine, Los Angeles, California.

Intermission for Review of Exhibits

Address: Syndromes of Gall Bladder Disease—Surgical Management.
Dr. William D. Haggard, Professor of Clinical Surgery, Vanderbilt University School of Medicine, Nashville, Tennessee.

Address: The Therapeutic Value of Blood Transfusions.
Dr. Cyrus C. Sturgis, Professor of Internal Medi-

cine, University of Michigan Meedical School, Ann Arbor, Michigan.

Address: The Surgical Management of Brain Tumors.
Dr. Alfred W. Adson, Professor of Neurosurgery, Mayo Foundation Graduate School of the University of Minnesota. Senior Neurosurgeon of the Mayo Clinic, Rochester, Minnesota.

DINNER INTERMISSION

7:00 P. M.

Address: Obscure Fevers as Diagnostic Problems.
Dr. George Blumer, David P. Smith, Clinical Professor of Medicine, Yale University School of Medicine, New Haven, Connecticut.

Address: Treatment of Fracture Dislocations of the Cervical Vertebrae by Skeletal Traction and Fusion.
Dr. William G. Turner and Dr. William Cone, Department of Neurosurgery and Orthopedics, McGill University, the Montreal Neurological Institute, and the Royal Victoria Hospital, Montreal, Quebec, Canada.

Address: Complications of Pregnancy.
Dr. Nicholson J. Eastman, Professor of Obstetrics, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Address: Acute Pancreatitis.
Dr. Eldridge L. Eliason, Professor of Surgery, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania, and Dr. William H. Erb by invitation.

Address: The Factors Influencing Operability and Mortality in Carcinoma of the Large Bowel.
Dr. Richard B. Cattell, Lahey Clinic, Boston, Massachusetts.

Tuesday, November 1

8:00 A. M.

Diagnostic Clinic: Diagnostic Significance of Pain.
Dr. Frederick J. Kalteyer, Clinical Professor of Medicine, Jefferson Medical College of Philadelphia. Philadelphia, Pennsylvania.

Diagnostic Clinic: Thyroid Diseases.
Dr. Robert S. Dinsmore and Dr. A. Carlton Ernstene, Cleveland Clinic, Cleveland, Ohio.

Diagnostic Clinic: Chronic Disease of the Liver.
Dr. Charles A. Elliott, Professor of Medicine, Northwestern University Medical School, Chicago, Illinois.

Intermission for Review of Exhibits

Diagnostic Clinic: Clinical Significance of a Lump in the Breast.
Dr. Edmond M. Eberts, Professor of Surgery, McGill University Faculty of Medicine, Montreal, Quebec, Canada.

Diagnostic Clinic: Obstruction of the Neck of the Bladder in Men.
Dr. William E. Lower, Cleveland Clinic, Cleveland, Ohio.

NOON INTERMISSION

1:00 P. M.

Diagnostic Clinic: Tic Douloureux.
Dr. Howard C. Naffziger, Professor of Surgery, University of California Medical School, San Francisco, California.

Therapeutic Clinic: The Treatment of Dehydration and Edema.
Dr. James H. Means, Jackson Professor of Clinical Medicine, Harvard University Medical School, Boston, Massachusetts.

Address: The Diagnosis and Treatment of Peripheral Nerve Injuries.
Dr. Loyal Davis, Professor of Surgery, Northwestern University Medical School, Chicago, Illinois.

Address: Immediate and Ultimate Prognosis in Heart Disease.
Dr. Paul D. White, Lecturer in Medicine, Harvard University Medical School, Boston, Massachusetts.

Intermission for Review of Exhibits

Address: Diagnosis and Treatment of Bronchogenic Carcinoma.
Dr. Arthur C. Christie, Professor of Clinical Radiology, Georgetown University School of Medicine, Washington, D. C.

Address: Gastroscopy as an Aid in Diagnosis.
Dr. Chevalier L. Jackson, Professor of Broncho-Esophagology, Temple University School of Medicine, Philadelphia, Pennsylvania.

Address: Adenomatous Thyroid With and Without Hyperthyroidism—Medical and Surgical Aspects.
Dr. Charles W. Mayo, Assistant Professor of Surgery, and Dr. Samuel F. Haines, Assistant Professor of Medicine, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

DINNER INTERMISSION

7:00 P. M.

Address: Diagnosis and Treatment of Carcinoma of the Fundus of the Uterus.
Dr. Floyd E. Keene, William Goodell, Professor of Gynecology, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

Address: The Present Status of Our Knowledge of Anterior Poliomyelitis.
Dr. John C. Gittings, William H. Bennett, Professor of Pediatrics, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

Address: The Diagnosis and Treatment of Splenomegaly.
Dr. Allen O. Whipple, Valentine Mott, Professor of Surgery, Columbia University College of Physicians and Surgeons, New York, New York.

Address: Neoplasms of the Stomach; Correlation of Roentgenological and Clinical Aspects.
Dr. Fred J. Hodges, Professor of Roentgenology, University of Michigan Medical School, and Dr. Robert M. Bartlett, Instructor in Department of Surgery, University of Michigan Medical School, Ann Arbor, Michigan.

Address: The Use of Spinal Anesthesia.
Dr. Thomas H. Russell, Professor of Clinical Surgery, New York Postgraduate Medical School, Columbia University, Executive Officer and Director of Department of Surgery, New York Postgraduate

Medical School and Hospital, New York, New York.

Wednesday, November 2

8:00 A. M.

Diagnostic Clinic: Diagnosis and Treatment of Spinal Cord Tumors.

Dr. Walter E. Dandy, Adjunct Professor of Neurological Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Diagnostic Clinic: Differential Diagnosis of Acute Abdominal Disease.

Dr. Claude F. Dixon, Associate Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Diagnostic Clinic: Diabetes Mellitus from an Endocrinological Viewpoint.

Dr. Elliott P. Joslin, Clinical Professor of Medicine, Harvard University Medical School, Boston, Massachusetts.

Intermission for Review of Exhibits

Diagnostic Dermatological Clinic:

Dr. Oliver S. Ormsby, Clinical Professor of Dermatology, Rush Medical College, University of Chicago, Chicago, Illinois.

Diagnostic Clinic, Treatment of Complicated Colles Fractures.

Dr. William Darrach, Dean Emeritus and Professor of Clinical Surgery, Columbia University College of Physicians and Surgeons, New York, New York.

NOON INTERMISSION

1:00 P. M.

Diagnostic Clinic: The Indications, Contraindications, and End Results in the Surgical Treatment of Essential Hypertension.

Dr. George Crile, Cleveland Clinic, Cleveland, Ohio.

Address: Hyperpyrexia by Physical Agents; Technic, Indications and Results.

Dr. John S. Coulter, Associate Professor of Physical Therapy, Northwestern University Medical School, Chicago, Illinois.

Address: Clinical Significance of Hematuria.

Dr. William F. Braasch, Professor of Urology, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Address: A Medical Appraisal of the Surgery of Pulmonary Tuberculosis.

Dr. William S. Middleton, Dean and Professor of Medicine, University of Wisconsin Medical School, Madison, Wisconsin.

Intermission for Review of Exhibits

Address: The Clinical Use of Sulfanilamide in Infectious Diseases.

Dr. Perrin H. Long, Associate Professor of Medicine, Johns Hopkins University School of Medicine, Lecturer in Epidemiology, Johns Hopkins School of Hygiene and Public Health, Associate Physician Johns Hopkins Hospital, Baltimore, Maryland.

Address: Acute Appendicitis; Management and Mortality.

Dr. George P. Muller, Professor of Surgery, Jefferson Medical College, Philadelphia, Pennsylvania.

Address: Injuries to the Heart, Stab Wounds, and Contusions.

Dr. Claude S. Beck, Associate Professor of Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.

Address: Improvements in Methods of Abdominal Drainage.

Dr. W. Wayne Babcock, Professor of Surgery and Clinical Surgery, Temple University School of Medicine, Philadelphia, Pennsylvania.

ASSEMBLY DINNER

7:00 P. M.

Addresses by distinguished citizens of the world.

Thursday, November 1

8:00 A. M.

Diagnostic Clinic: Role of Diseases of the Sinuses to General Medicine.

Dr. Robert F. Ridpath, Professor of Laryngology and Rhinology, Temple University School of Medicine, Philadelphia, Pennsylvania.

Diagnostic Clinic: The Significance of Enlargement of the Abdomen in Children.

Dr. Irvine McQuarrie, Professor of Pediatrics, University of Minnesota Medical School, Minneapolis, Minnesota.

Diagnostic Clinic: The Diagnosis of Bone Lesions.

Dr. Dean Lewis, Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Intermission for Review of Exhibits

Diagnostic Clinic: Non-Organic Disorders of the Digestive Tract.

Dr. Alfred Stengel, Professor of Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

Diagnostic Clinic: Somatic Complaints in the Neuroses: Case Presentations.

Dr. Peter T. Bohan, Professor of Clinical Medicine, University of Kansas School of Medicine, Kansas City, Missouri.

NOON INTERMISSION

1:00 P. M.

Diagnostic Clinic: Immediate Care of Fractures.

Dr. Clay Ray Murray, Associate Professor of Surgery, Columbia University College of Physicians and Surgeons, New York, New York.

Diagnostic Clinic: Hodgkin's Disease.

Dr. Warfield T. Longcope, Professor of Medicine, Johns Hopkins Univerity School of Medicine, Baltimore, Maryland.

Address: Immediate Versus Delayed Surgery in the Treatment of Acute Diseases of the Gall Bladder.

Dr. Charles Gordon Heyd, Professor of Clinical Surgery, New York Postgraduate Medical School, Columbia University, New York, New York.

Address: The Management of Peritonitis.

Dr. Vernon C. David, Clinical Professor of Surgery, Rush Medical College, University of Chicago, Chicago, Illinois.

Intermission for Review of Exhibits

Address: Osteomyelitis of the Frontal Bone.

Professor Dr. v. Eicken, Department of Otolaryngology, Medical Faculty University of Berlin, Berlin, Germany.

Address, The Object and the Value of Preoperative and Postoperative X-ray Treatment in Carcinoma of the Breast.

Dr. George E. Pfahler, Professor of Radiology, University of Pennsylvania Graduate School of Medicine, Philadelphia, Pennsylvania.

Address: Subtemporal Decompression; Indications and Surgical Technique.

Dr. Eric Oldberg, Professor and Head of the Department of Neurology and Neurological Surgery, University of Illinois College of Medicine, Chicago, Illinois.

Address: Relation of Trauma to Inguinal Hernia; Analysis of 1000 Herniotomies.

Dr. John J. Moorhead, Professor of Clinical Surgery, New York Postgraduate Medical School, Columbia University, New York, New York.

DINNER INTERMISSION

7:00 P. M.

Address: Classification and Treatment of the Epilepsies.

Dr. Wilder Penfield, Professor of Neurology and Neurosurgery, McGill University Faculty of Medicine; Director of Montreal Neurological Institute, Montreal, Canada.

Address: The Clinical Significance of Retinal Changes in Arterial Hypertension.

The Joseph Schneider Foundation Presentation.

Dr. Walter I. Lillie, Professor of Ophthalmology, Temple University School of Medicine, Philadelphia, Pennsylvania.

Address: The Prognosis and Treatment of Rheumatic Heart Disease.

Dr. Fred M. Smith, Professor of Theory and Practice of Medicine, State University of Iowa College of Medicine, Iowa City, Iowa.

Address: Psychotherapy in General Medicine.

Dr. Clarence B. Farrar, Professor of Psychiatry, University of Toronto Faculty of Medicine, Toronto, Canada.

Address: Pellagra.

Dr. John H. Musser, Professor of Medicine, Tulane University of Louisiana School of Medicine, New Orleans, Louisiana.

Friday, November 4

8:00 A. M.

Diagnostic Clinic: Carcinoma of the Larynx with Special Reference to End Results.

Dr. Louis H. Clerf, Professor of Laryngology and Bronchoscopy, Jefferson Medical College, Philadelphia, Pennsylvania.

Diagnostic Clinic: Compressed Fractures of the Vertebrae.

Dr. Hubley R. Owen, Professor of Clinical Surgery, Woman's Medical College of Pennsylvania, Philadelphia, Pennsylvania.

Diagnostic Clinic: The Management of Gastric and Duodenal Ulcer, Jejunal Ulcer, and Gastrojejunocolic Fistula.

Dr. Frank Lahey, Lahey Clinic, Boston, Massachusetts.

Intermission for Review of Exhibits

Diagnostic Clinic: The Differential Diagnosis of Diseases of the Chest and Abdomen.

Dr. David Riesman, Emeritus Professor of Clinical Medicine and Professor of History of Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

Diagnostic Clinic: Diagnosis and Treatment of Obstructive Lesions of the Colon.

Dr. John F. Erdmann, Attending Surgeon, New York Postgraduate Medical School, New York, New York.

NOON INTERMISSION

1:00 P. M.

Diagnostic Clinic: Treatment of Fractures of the Neck of the Femur by Internal Fixation.

Dr. M. N. Smith-Petersen, Clinical Professor of Orthopedic Surgery, Harvard University Medical School, and Chief of Orthopedic Service, Massachusetts General Hospital, Boston, Massachusetts.

Diagnostic Clinic: Complications Following Surgery of the Biliary Tract.

Dr. Waltman Walters, Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minnesota.

Address: The Present Status of Our Knowledge of the Suprarenal Cortical Hormone.

Dr. George A. Harrop, Director of Research, E. R. Squibb & Sons, New Brunswick, New Jersey.

Address: Obstruction of the Neck of the Bladder in Woman.

Dr. Hugh H. Young, Professor of Urology, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Intermission for Review of Exhibits

Address: Studies in Growth—Precocious and Malignant.

Dr. Leonard G. Rowntree, Director, Philadelphia Institute for Medical Research, Philadelphia, Pennsylvania.

Address: Trauma of the Abdomen.

Dr. Arthur R. Metz, Associate Clinical Professor of Surgery, Rush Medical College, University of Chicago, Chicago, Illinois.

Address: Influenzal Pneumonias: Observations on Their Pathological Features and Clinical Characteristics.

Dr. Robert G. Torrey, Professor of Medicine, Woman's Medical College of Pennsylvania, Philadelphia, Pennsylvania.

Address: The Treatment of Bronchiectasis.

Dr. Edward D. Churchill, John Homans Professor of Surgery, Harvard University Medical School, Boston, Massachusetts.

UNDULANT FEVER ON INCREASE

According to a report from the State Board of Health there has been up to August first this year 98 cases of Undulent Fever reported in Illinois, considerably more than in the corresponding period of any previous year. The nearest approach to the reported incidence this year was in 1935 when 89 cases were recorded up to August 1 and 144 for the full year.

Four epidemic foci have appeared this year, Woodford County with 20 cases, Tazewell with 7 and Montgomery and Ogle with 6 each. The other cases were distributed in 37 counties, located in all parts of the State.

Undulant fever is a highly disabling disease of relatively long duration transmitted to man from infected animals, usually cattle or swine. In animals the disease is commonly known as contagious abortion. It reaches man mainly through three channels—(1) the drinking of raw milk from infected cattle, (2) close contact with infected animals and (3) the handling of carcasses of slaughtered infected animals. The first two are of about equal importance and are responsible for the bulk of cases.

A lingering disease characterized by recurrent fever, malaise, headache, profuse sweating, neuralgic pains, possibly swelling of the joints and enlargement of the spleen, about 1 in 20 cases of undulant fever terminates fatally. Duration of illness varies from a few weeks to several years but is usually about 3 months.

Pasteurization is the most readily available method of preventing those cases that are spread through milk. The elimination by slaughter of infected animals appears to be the only practicable method of permanently controlling the disease. Skin reaction tests show up infection in animals. The State Department of Agriculture is prepared to test herds free of local costs provided the owners agree to dispose of positive reactors and purchase only negative reactors in the future when adding to herds. The Federal government will indemnify herd owners up to $25 per head for common cattle and up to $50 per head for registered cattle for losses sustained in the sale of slaughtered cattle at prices below appraised values.

Diagnosis of undulant fever in humans is frequently difficult, since this illness may be similar to malaria, typhoid fever or tuberculosis. Laboratory testing of blood specimens from patients is helpful in diagnosis. Blood specimens can be tested in three different ways, one of these tests requiring fresh blood. There is also a skin test of considerable reliability. The blood tests will be done on request in the diagnostic laboratories of the State Department of Public Health.

ILLINOIS ASSOCIATION FOR THE CRIPPLED

The Second Annual Meeting of the Illinois Association for the Crippled will be held at the Knickerbocker Hotel, Chicago, September 15, 1938. The Annual Business Meeting and election of officers and directors will be held at 10:00 A. M.

The outstanding feature of the day's program will be the luncheon. An authority on Public Welfare Administration will analyze the present status of our State program and suggest necessary legislative changes to bring about better coordination and improved services.

Mr. Paul King, President of the International Society for Crippled Children, will be an honor guest and speaker at the luncheon. A round table conference of workers for the crippled will be held in the afternoon.

A proposed legislative program will be discussed and it is hoped that everyone in any way interested in the work for crippled children and handicapped adults will be there.

Among the subjects to be discussed at the afternoon conference are:

1. What changes are necessary in our present law to give an adequate education to crippled children in Illinois?
2. How can we bring about a better coordination of the work of the State and private agencies?
3. What can be done to provide remunerative employment for cripples who cannot find work in private industry? Is sheltered workshops the answer? If so, how should they be organized and conducted?
4. What can be done to provide physical care and treatment for cripples beyond the age of twenty-one?
5. What of the cripple who needs continuous institutional care? Should the State provide for them?

The Annual Meeting will be held in conjunction with the Administrative Council Meeting of the International Society for Crippled Children and workers for crippled children in all parts of the United States and Canada will be in attendance.

Remember the date—September 15th—Knickerbocker Hotel, 163 East Walton Place, Chicago.

The luncheon will be $1.25 per plate. An early reservation will be appreciated. Send this to the Illinois Association for the Crippled, 35 East Wacker Drive, Chicago—or 'phone CENtral 8624.

MACOUPIN COUNTY SOCIETY

The Macoupin County Medical Society will hold their next regular meeting Tuesday evening, September 27, 1938, at the Hillside Country Club, Carlinville, Illinois, at 7 p. m. The program for the evening will be presented by members of the staff of the Mayo Clinic, Rochester, Minnesota. Doctor C. H. Slocumb will talk on "Diagnosis and treatment of the more common forms of arthritis." Doctor H. W. Schmidt will talk on "The Use of the Bronchoscope, Esophagosope, and Gastroscope as diagnostic procedures."

The Macoupin County Medical Society extends an invitation to all of the members of the neighboring Medical Societies to attend this interesting meeting.

AMERICAN BOARD OF INTERNAL MEDICINE, INC.

Written examinations for certification by the American Board of Internal Medicine will be held in various parts of the United States on Monday, October 17, 1938, and on Monday, February 20, 1939.

Formal application must be received by the Secretary before September 15, 1938, for the October, 1938,

examination, and on or before January 1 for the February, 1939, examination.

Application forms may be obtained from William S. Middleton, M. D., secretary-treasurer, 1301 University Avenue, Madison, Wisconsin, U. S. A.

THE AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY

The first American Congress devoted to a consideration of medical, nursing and other problems associated with human reproduction will be held in Cleveland, Ohio, from September 11 to 15, 1939, inclusive. It will be designated as The American Congress on Obstetrics and Gynecology. The promotion and sponsorship of The Congress has been delegated to the American Committee on Maternal Welfare, Inc. The latter includes the following organizations in its membership:

American Association of Obstetricians, Gynecologists and Abdominal Surgeons.
American College of Surgeons.
American Gynecological Society.
American Hospital Association.
American Nurses Association.
American Protestant Hospital Association
American Medical Association Section on Obstetrics and Gynecology.
American Public Health Association.
Central Association of Obstetricians and Gynecologists.
Chicago Maternity Center.
Maternity Center Association of New York.
National Medical Association.
National League of Nursing.
National Organization for Public Health Nursing.
New England Obstetrical and Gynecological Society.
Pacific Coast Society of Obstetrics and Gynecology.
Southern Medical Association.
U. S. Bureau of the Census.
U. S. Children's Bureau.
U. S. Public Health Service.

The purpose of this Congress is to afford opportunities for discussing and publicising the problems associated with human reproduction and the health of women and new born babies. The value of more generally disseminated knowledge about the processes and problems of human reproduction and of the special diseases of the female generative organs and the new born is important in the maintenance of public health and therefore the interest of woman's welfare extends not only to the medical profession but to associated groups, including nurses, public health officials, hospital administrators, eugenists and many others.

National, sectional and local specialist societies have approved the Congress and have made contributions for its support. It is desired that a wider representation be secured through the medium of contributing memberships, the cost of which has been placed at five dollars. Application may be made at the office of the Congress, 650 Rush Street, Chicago, Illinois.

CALCIUM METABOLISM AND TEETH

Isaac Schour, Chicago (Journal A. M. A., March 19, 1938), points out that it is important to distinguish between the adult tooth, which is essentially completed in formation and calcification and is fully erupted, and the tooth that is still in a growing and formative stage. The biologic reaction of the tooth naturally varies with the different periods of its life span. Present evidence establishes the fact that the adult and fully erupted tooth is as a whole not subject to modification in structure or calcification by changes in calcium metabolism. The calcium content of dentin may be slightly increased with age by secondary calcification. However, unlike bone, enamel and dentin are not storehouses of calcium and are not subject to withdrawal. Present evidence has not established a correlation between calcium metabolism and caries and offers no factual basis for the view that the incidence of caries is increased because of the metabolic changes that occur during pregnancy. Clinical and statistical evidence shows a similar incidence of caries in pregnant women and in nonpregnant women of corresponding age. The indications are that the response of the growing and calcifying tooth to changes in calcium metabolism induced by endocrine factors and vitamin and other dietary factors is characteristic and to some extent pathognomic because the calcifying dental tissues are uniquely specialized and sensitive structures. Most of the evidence on the delicate, accurate and prompt response of the calcifying tooth to calcium disturbances is derived from data obtained from animal experimentation, especially on the incisor of the rat, which is a tooth of continuous growth. Nevertheless, recent results of studies on human beings indicate that human teeth are also very sensitive and possess similar kymographic qualities. The kymographic qualities of human teeth facilitate the analysis of the calcification pattern of teeth and constitute the basis for tooth ring analysis as an aid in the assessment of health and disease.. The employment of calcium therapy in dentistry is not justifiable. There is no evidence to show that alterations in calcium metabolism give rise to oral or dental disturbances without producing other systemic symptoms. When systemic manifestations are present, the responsibility for calcium therapy should rest with the physician.

Sulfanilamide Used in Puerperal Fever markedly reduces the length of hospital stay and the mortality rate. The average stay in hospital for treated cases is 19.7 days, with mortality rate of 5.5%, as compared to 31.3 days and 22.8 per cent in patients not treated with sulfanilamide. Colebrook & Purdie, *Lancet,* 2:1291, 1937.

Tuberculin may be of value in the treatment of ocular tuberculosis. Used over a period of one year in 38 cases, lesions healed in 26 per cent; of 14 patients not treated with Tuberculin all were unhealed at the end of one year. Burton, E. W., *Virginia M. Monthly,* 64:499, 1937.

Original Articles

THE RELATION OF ALLERGY TO DISEASES OF THE RESPIRATORY TRACT

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The relationship of allergy to the diseases of the respiratory tract is of the greatest importance to the internist as well as the allergist. Two phases of the subject are obvious, namely, first, the relationship of allergies chiefly of the nasal and respiratory type to both the acute and chronic respiratory conditions; and, secondly, the role of infectious respiratory diseases as a predisposing cause of allergic manifestations.

1: *Allergies as contributing factors in respiratory diseases.* Let us first consider nasal allergy. The underlying pathology in nasal allergy is edema of the mucous membrane with subsequent blocking of the nasal passages. This produces an ideal situation for bacterial growth, and acute infections chiefly of the sinuses frequently follow. The incidence of sinus disease in individuals with vasomotor rhinitis is very high, being particularly true in childhood.

Once the allergic manifestations have begun, they may occur either intermittently or continuously, according to the allergic factors involved. However, should a superimposed acute infection set in, the clinical course and symptomatology of the nasal allergy may be greatly altered, and at times entirely obscured. This is frequently observed in hay fever patients, in whom there frequently is a superimposed infection which may prolong the symptoms long after the season is over. It is only by repeated observations and study of the nasal secretions as pointed out by Hansel,[1] that these cases can be definitely differentiated.

In the wake of the acute infections, chronic conditions in the paranasal sinuses usually follow, and these may then act as a source of further infections, chiefly in the lower respiratory tract. It is generally accepted by most laryngologists that chronic infections of the paranasal sinuses is one of the common etiologic factors in the production of chronic laryngotracheitis, chronic bronchitis and bronchiectasis. It is readily obvious that nasal allergies, particularly those in which nasal blockage is present for long periods of time, produce fertile fields for superimposed infections of both the acute and the chronic type.

The complications associated with allergy of the lower respiratory tract are many. The most common sequellae of bronchial asthma are emphysema and chronic bronchitis; then in order may be mentioned bronchopneumonia, pleurisy, pneumothorax, atelectasis, bronchiectasis and lung abscess.

Emphysema, probably the most common sequel is undoubtedly the result of repeated pulmonary overdistension during acute asthmatic attacks. In an early asthma, this overdistension is only temporary, the lung because of its elasticity assuming its normal size after the attack. However, as the asthma becomes more chronic, and this is especially true in those individuals past middle life, the attacks tend to be more or less constant, the chest remaining partially overdistended during long periods of time. When this stage is reached there is a loss of elasticity and finally a destruction of elastic fibers, so that the lungs, and secondarily the chest, remain in an overdistended emphysematous state. It can therefore be said, that emphysema is almost a constant accompaniment of chronic asthma of long standing. The vital capacity which has been shown to be decreased not only during the attacks but also in the periods between attacks, is further indication of pulmonary overdistension and emphysema. The presence of emphysema naturally predisposes the patient to further secondary infection.

Chronic bronchitis is an important and frequent sequel of bronchial asthma, and may develop in the allergic individual with or without emphysema. The irritation of the bronchial mucosa which is practically always present in the acute asthmatic paroxysm, and which may persist for long periods after the acute symptoms have subsided, is often secondary to infections of the upper respiratory tract, chiefly sinusitis. In many patients a secondary infection of the entire tracheobronchial tree occurs. The infection may prove as distressing to the patient as the asthma, and may aggravate each attack. In such pa-

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tients, reinfections may occur with change in weather and particularly in the winter months. Asthmatics with chronic bronchitis, therefore, do poorly as a rule during these particular periods of the year, and also in localities with unstable atmospheric conditions. The asthmatic with chronic bronchitis rarely has a fever, but when it is present it is suggestive of an acute bronchitis or a bronchopneumonia. The latter is often the terminal condition in the chronic asthmatic.

Chronic sinusitis is frequently secondary to an asthma, particularly in those individuals with an associated vasomotor rhinitis. As has already been pointed out, untreated nasal allergy predisposes the individual to secondary infection of the paranasal sinuses.

Bronchiectasis, although found less frequently in association with the latter two, particularly when they are of long standing, is nevertheless found frequently enough to be of importance. Bullen[2] in a series of 400 asthmatics found an incidence of 7.75 per cent. It apparently is prone to occur in asthmatics with infections of the paranasal sinuses in which there is a chronic cough and bronchitis. The mechanism involved is probably one in which the continued infection and reinfection of the bronchial tree is followed by a dilatation of the weakened wall with a retention of secretion and the formation of a bronchiectatic cavity. One usually becomes suspicious of a bronchiectasis in the asthmatic who has a marked increase in the amount of sputum, particularly noticeable on change of position, or by the occurrence of hemoptysis.

Pulmonary abscess is a rare sequel, as is also spontaneous pneumothorax. The latter usually occurs during a severe attack with prolonged violent coughing, and with marked overdistension of the lung.

Pleurisy is occasionally found in the asthmatic, but usually in association with other pulmonary complications as pneumonia. It is frequently mistaken for pain in the intercostal muscles during severe attacks.

Atelectasis, usually partial or lobular in variety, is not as rare a complication as formerly thought. Massive collapse is however relatively rare, but when present it usually involves the lower lobes and may produce death. The mechanism is probably one of plugging of the smaller bronchioles by tenacious thick bronchial secretions. It has been noted by many bronchoscopists that the symptoms in certain cases of asthma and atelectasis are very similar. Wilmer, Cobe and Lee[3] find a definite relationship between allergy and postoperative atelectasis. A large percentage of their cases with postoperative atelectasis showed definite characteristics of allergy. It is also believed by some that atelectasis is responsible for many of the more severe attacks of asthma, chiefly the conditions of "status asthmaticus."

2: *The role of infectious respiratory diseases as a predisposing cause of allergic manifestations.* Let us now consider those predisposing factors which are usually antecedent to the development of the first asthmatic attack. These forces comprise those which pave the way for the onset of asthma, regardless of the immediate excitant of the attack itself. They may be the precipitating causes in many instances.

Acute infections of the respiratory tract often usher in the initial attack of asthma. Various authors give from 40 per cent. to 66 per cent. of asthmatic attacks preceded by acute respiratory infections. Acute infections of both the upper and lower respiratory tract are not only a very common exciting factor of the asthmatic state, but perhaps the most important single factor in the causation of the paroxysm itself. Regardless of whether an individual is hypersensitive to a specific allergen or to bacteria, an acute rhinitis or bronchitis frequently ushers in asthmatic symptoms in such individuals. Symptoms may vary in degree and severity from a transient wheeze to a full blown attack. Many such patients know of no other cause and investigations often fail to show sensitivity to specific allergens, whereas in others very definite specific hypersensitivity cannot only be demonstrated but proven clinically, and in the latter type of case the infection, although a precipitating factor, should be considered as an additional nonspecific excitant.

Among the infectious respiratory diseases in children, pertussis is by far the most common etiologic factor in asthma. Peshkin[4] found 15 per cent. in whom the asthma could be definitely attributed to pertussis. Pneumonia ranks second to pertussis in importance. Frequently after such an initial attack, subsequent attacks occurring within the succeeding months or years may be

ushered in only by acute respiratory infections. Eventually, however, definite clinical hypersensitivities will develop to prolong the attacks. The patient now develops more or less of a chronic bronchial asthma of varying severity.

Influenza, rarely an exciting cause in childhood, is nevertheless frequently a cause in adults. The large number of individuals who date their first asthmatic attack from the epidemics of 1918 and 1919 is certainly impressive.

The relationship between subacute and chronic infections and bronchial asthma is less clearly defined. Of this group unresolved pneumonia seems to be important. Several authors have described small groups of cases in which there can be very little doubt that an unresolved pneumonia was not the underlying cause of the asthma.

The relationship of asthma to tuberculosis is one which has created a great deal of discussion, and a most voluminous literature has been written on the subject. The present concept is one which opposes the thought that tuberculsois and asthma are specifically correlated in any manner. Various authors in large series of cases find from 0.7 per cent. (Schroder[5]) to 1.9 per cent. (Klewitz[6]). Harkavy and Hebald[7] found a much higher incidence, namely, 10 per cent., but are convinced that the two conditions are independent of each other. In their tuberculous cases with positive cutaneous reactions and with definite foci of infection, the course of the asthma was similar to that occurring in non-tuberculin sensitive and infectious cases.

There are, however, many who maintain that healed or latent tuberculosis has been the forerunner, or may be coexistent with, many cases of asthma. They base their concepts on the following criteria: first, the high incidence of tuberculin reactions in asthmatic children; second, the presence of enlarged hilum lymph glands which are so common in asthma, and which are often mistaken for hilum or glandular tuberculosis; and, third, the apparent good results which have been reported with tuberculin therapy in certain groups of asthmatics. Most observers, however, do not consider pulmonary tuberculosis an important etiologic factor. It is difficult to believe that pulmonary tuberculosis should be a greater predisposing factor in bronchial asthma than it is in other lung infections.

Probably the most important of all the subacute and chronic infections in the etiology of asthma are focal infections. These infections may exist in many organs of the body, and all have been incriminated, although it is often hard to conceive that infections of organs like the gall bladder and kidney are of etiological importance. The infections of the sinuses, tonsils and teeth are probably the most important. Of these, there is no doubt that sinusitis is one of the most common causes of the so-called infectious type of asthma. The exact mechanism involved in the relationship has not definitely been determined, but may be explained by either (a) reflex irritation of an "asthmogenic area," and for which there is very little clinical support at present; (b) mechanical obstruction, produced by swellings and hypertrophies of the turbinates, abnormalities of the septum or polyps; (c) absorption of toxic products of infections through the lymph or blood stream, which has been demonstrated in animals by Mullin[8] as a possible means of entrance; and (d) by constant drainage of pus into the trachea and bronchi producing repeated attacks of bronchitis and a subsequent asthma. These factors may act singly or in combination.

In summary it may be stated that allergies of the nasal and asthmatic types contribute to some of the diseases of the respiratory tract, particularly those which are chronic in their clinical course. Likewise acute infections of the lower and chronic infections of the upper respiratory tract appear to be predisposing and exciting factors in many cases of respiratory allergy. The exact mechanisms are frequently obscure. It is only by persistent careful observations of large series of cases that the true relationship may be established.

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BRONCHOSCOPY IN RELATION TO DISEASES OF THE RESPIRATORY TRACT

Paul H. Holinger, M. D.
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Bronchoscopy is one of the more recently developed diagnostic and therapeutic aids used in the management of diseases of the respiratory tract. Thirty years ago the bronchoscope was used only for the removal of foreign bodies. At the present time it is used as a speculum to illuminate the tracheobronchial tree.[1] Diagnostic information is obtained by such a specular examination, and therapeutic procedures are performed through the tube. Although foreign body extraction is still an extremely important phase of bronchoscopy, it now accounts for only three to four per cent. of the total number of cases examined or treated in a bronchoscopic clinic.

In entering the trachea with the bronchoscope, the larynx must first be exposed; consequently, a discussion of the direct examination of this extremely important portion of the respiratory tract is considered desirable. Hoarseness and dyspnea are cardinal symptoms of laryngeal disease.[2] Hoarseness in an adult is as early and constant a finding or warning of serious laryngeal disease as is cough in tuberculosis. If this warning is conscientiously heeded and followed by a thorough, immediate laryngeal examination of every patient who is hoarse, our mortality statistics from carcinoma of the larynx will fall accordingly. This thorough inspection of the larynx consists of mirror laryngoscopy, followed in most cases by direct inspection with the laryngoscope. Since the earliest site of carcinoma of the larynx is most frequently the anterior commissure, which is only too commonly hidden by a posterior-lying epiglottis, the laryngoscope must be used to expose this area in all doubtful cases. Similarly, the infant's larynx can be inspected only by the use of the direct laryngoscope. The differential diagnosis of laryngeal pathology depends so completely on the laryngeal picture in most cases that this examination should be made much more frequently. Direct laryngoscopy is a relatively simple procedure in proportion to the amount of information which can be obtained by it.

Indications for bronchoscopy in relation to diseases of the respiratory tract may be divided into three major classifications, namely: 1. cases of bronchial obstruction, 2. suppurative diseases of the tracheobronchial tree, and 3. those cases of obscure pulmonary lesions in which further study is necessary in order to establish a diagnosis.

Bronchial obstruction may be partial or complete, its presence being recognized on physical examination and x-ray as a wheeze, an obstructive emphysema, or an atelectasis.[3] The obstruction may be caused by an intrabronchial, endobronchial, or extrabronchial lesion, producing any of these findings. Therefore, once the diagnosis of bronchial obstruction has been made, the actual nature of the lesion must be determined by the bronchoscopic picture, because foreign bodies, known or unsuspected, tumors, bronchial compression, or cicatricial stenoses produce identical physical and x-ray findings. Of even greater importance is the determination of the *type* of tumor in cases of neoplastic disease.[4] The biopsy specimen makes possible this differentiation, as well as that between benign and malignant growths, which otherwise cannot be established clinically.[5]

Suppurative diseases. Bronchiectasis is a disease characterized by one of several types of dilatation of the bronchi and usually associated with pulmonary suppuration.[6] With the increasingly accurate methods of diagnosis by means of bronchography and bronchoscopy, this condition has been shown to be the most common chronic disease of the chest, occurring even more frequently than pulmonary tuberculosis.

The advanced bronchiectatic patient presents a classic picture. His bloated, pasty appearance, barrel chest, clubbed fingers, dyspnea and constant cough which is frequently productive of large quantities of foul muco-pus, make him a social outcast. Occasional hemoptysis from oozing granulations or ulcerations adds to his discomfort, debility and apprehension. There is frequently an associated pansinusitis. Repeated pulmonary infections occur with fever, pleuritic pain, malaise, and signs suggestive of pneumonia as a result of bronchial obstruction and retention of secretions. As a rule, the patients are better

From the Bronchoscopic Clinics of St. Luke's Hospital, the Children's Memorial Hospital, and the Research and Educational Hospital of the University of Illinois College of Medicine, Chicago.

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in summer than in winter, and may be entirely free of the cough until an upper respiratory infection early in the fall causes reinfection of the bronchi.

The severity of symptoms, however, is dependent upon the degree of bronchial dilatation and pulmonary infection. Some patients can evacuate the bronchial tree by paroxysms of cough in the morning and evening, and are relatively free of symptoms during the remainder of the day. Others complain only of the loose rattling cough, and in the so-called dry bronchiectasis the only symptom may be the occasional hemoptysis.

Almost every field of medicine enters into the treatment of the bronchiectatic patient. His general resistance must be increased in order that he may better handle the frequent intercurrent infections. This includes rest, high caloric, high vitamin diet, strict attention to oral hygiene, and thorough eradication of sinus pathology. Early recognition and removal of foreign bodies, dilatation of bronchial stenoses, bronchoscopic aspiration of areas of pulmonary suppuration and suppurative bronchitis aid in preventing the development of this disease.

The active treatment should be directed toward establishing and maintaining adequate bronchial drainage. This can be done by postural drainage, but must be supplemented by the better evacuation of secretions that can be accomplished by bronchoscopic aspiration.[3] In the advanced case this is particularly indicated as a palliative procedure, while in the case of prebronchiectatic atelectasis it will arrest the process and prevent further destruction.[7, 8] Vaccines prepared from bronchoscopically obtained secretions are of considerable benefit in some cases.

Lung abscess, non-tuberculous, is a localized suppuration of pulmonary tissue associated with cavity formation, which may be found anywhere throughout the lung tissue. The presence of a fluid level depends upon whether or not bronchial or external drainage is established.

Because of the serious nature of this disease, internist, surgeon and bronchoscopist together should regulate the course of therapy. Postural drainage aids many patients, and they learn to lie in the position which best evacuates the cavity or cavities. However, in the markedly debilitated patient with large quantities of pus, it may be overdone. Neoarsphenamine, whether or not fusospirochetal organisms have been demonstrated, generally aids in reducing the foul odor of the sputum.

Bronchoscopy, both for diagnosis and treatment, is definitely indicated. Aspiration of secretion, dilatation of stenotic bronchi leading to the abscess, and removal of obstructing granulation tissue from the bronchus can be accomplished in this manner. Bronchoscopic lavage of chronic abscesses has been found by some to be of considerable benefit. These procedures can all be done under local anesthetic in adults and without anesthesia of any kind in children.

In acute cases, drop in temperature, reduction of cough, and marked general improvement of the patient following the establishment of adequate bronchial drainage of the abscess cavity are most striking. Surgery should not be delayed, however, in those cases which do not show a fairly prompt response to these more conservative procedures.

Postoperative massive collapse of the lung is the massive atelectasis due to the obstruction of one of the main bronchi by thick, viscid, mucofibrinous secretion, and may follow any surgical procedure.[9] Important etiologic factors are those which tend toward an increase in the production of mucoid secretion by the tracheobronchial mucosa, associated with those which aid in the stagnation of these secretions by retarding cough reflex and expansion of the chest.

The first symptoms usually occur 24 to 48 hours after the operation, beginning with chest pain and a persistent, somewhat productive cough which the patient attempts to suppress, because of both the pain at the site of incision and the chest pain. Respiration becomes shallower and more rapid, soon being definitely labored. This may progress to cyanosis. There is a correspondingly rapid rise in the temperature, but the pulse rate does not rise proportionately. The sputum at the onset is usually scanty; it is thick, tenacious, glossy or white. Later it becomes purulent.

The physical findings, essentially, are the shift of the heart and mediastinum to the affected side, dulness, limitation of motion, and elevation of the diaphragm. Breath sounds change rapidly, depending on the amount of obstruction and whether a coughing spell dislodges secretions. They may be entirely absent, suppressed,

or bronchial in character, depending upon the existence of partial or complete atelectasis.

The roentgen ray findings are of greatest importance and consist essentially of the three cardinal signs of an atelectatic lung, namely: 1. the marked shift of the heart and mediastinum toward the affected side, 2. the elevation of the diaphragm on the affected side, and 3. the increased density of the involved lung. There is, of course, a compensatory emphysema of the opposite side.

The oft-repeated statement that this condition is due to a plug of mucus in a main bronchus does not adequately describe the pathology. There is, instead, a production of thick, viscid, tenacious secretion throughout the entire tracheobronchial tree, almost as much being found on the unaffected as on the collapsed side.[10] The bronchial mucosa is little changed in the early stages of this condition, and there are relatively few bacteria in the secretion. Later, the secretion becomes purulent and foul smelling because it has been an excellent culture medium for organisms. A purulent bronchitis develops which may progress to lung abscess or bronchiectasis, or to a fatal termination as the patient drowns in his own secretions.

Postoperatively, certain factors are of great importance both prophylactically and therapeutically. The common practice in recent years of hyperventilating the lung immediately after completion of the anesthetic seems to be of utmost benefit. The use of carbon dioxide and postural changes every two or three hours, day and night, should some chest symptom suggest itself, is definitely indicated. Certainly the use of carbon dioxide is of more value than the administration of oxygen, because the carbon dioxide stimulates more active respiratory action, which tends to displace the obstructing secretion. Oxygen, on the other hand, allows the patient to obtain the same amount of pulmonary exchange on shallower respiration. Obviously, this is to be avoided, but the administration of oxygen to a dyspneic, cyanotic patient is too frequently the first step taken and, unfortunately, appears to be rational.

The use of a tight abdominal binder, especially in a case of an upper abdominal operation, further limits the respiratory excursions and increases the incidence of collapse.

Sedatives and atropine should be withheld. Bronchoscopic aspiration of the obstructing secretions, when these methods fail, should be employed without hesitation. On introduction of the bronchoscope through the larynx, one is impressed by the tremendous amount of secretion lying in the trachea and both bronchi. Because of its viscosity it is aspirated with difficulty; but, by using an aspirating bronchoscope and an independent aspirator, more secretion can be removed in a minute or two than the patient can cough up in several days. The secretion, if the aspiration is done shortly after the onset of the collapse, is white, very thick, viscid and tenacious, and it usually clots in the collecting tube. It contains a great deal of fibrin but very little pus and few bacteria.

The change in the general condition of a patient following bronchoscopic aspiration is often as striking as that seen following tracheotomy. The immediate relief is reflected in the temperature, pulse and respiration curves. Physical findings and roentgen ray show a rapid return to normal, although the cough continues to be productive for a few days. Should there be a tendency toward replugging, however, one need not hesitate to do repeated bronchoscopic aspirations.

Asthma. The bronchoscope can be used to aspirate obstructing secretions in asthmatics to give them marked relief if symptoms are caused by bronchial obstruction.[11] Moreover, inspection of the tracheobronchial tree may yield considerable information of diagnostic significance. Andrews[12] gave a comprehensive review of this subject at this meeting last year.

Obscure Pulmonary Lesions. Under this heading may be mentioned certain indications for bronchoscopy of a strictly diagnostic character. Bronchoscopy is obviously contraindiacted in cases of gross hemoptysis, but should be done to establish a diagnosis in cases of occasional hemoptysis after the sputum has been found negative for tubercle bacilli. The thin stream of blood frequently may be followed to its source, and a small tumor, ulcer or inflammatory area found there to account for the hemoptysis. Similarly, a wheeze or a constant cough of undetermined etiology is an indication for bronchoscopy. Cough is a symptom, and its cause must be investigated, not merely covered by cough mix-

tures. Bacteriologic examination of the aspirated material may reveal a yeast or fungus infection not demonstrable in the sputum.

In closing, some of the newer phases of bronchoscopy may be mentioned. *Pulmonary tuberculosis* was long considered a contraindication to bronchoscopy. It is still true that the uncomplicated case of tuberculosis does not require bronchoscopy either for diagnosis or treatment, and when the sputum of a patient is found to be positive, findings other than the actual pulmonary lesion itself are necessary to indicate the procedure.[13] However, in recent years an increasing number of tuberculous lesions of the tracheobronchial tree has been recognized. These require direct inspection in order that diagnostic phases can be clarified and endobronchial therapy instituted. Occasionally the diagnosis of tuberculosis is made by examination of the bronchoscopically aspirated secretions even though previous sputum tests were negative.

Ulcerations of the mucosa and cartilages of the tracheobronchial tree comparable to the tuberculous ulcers seen on the epiglottis are frequently the source of positive sputum when a good collapse of the parenchymal lesion has been obtained.[14] Cauterization of these lesions through the bronchoscope hastens the healing process. A tuberculoma within the lumen of the trachea or bronchi may produce no signs or symptoms other than a wheeze, but it may become large enough to obstruct a major bronchus or the trachea and, consequently, produce dyspnea, due to obstructive emphysema or atelectasis. The removal of these tumors, either by forceps or cautery, is indicated to keep the airway patent and to prevent a suppurative process from developing below the obstruction. Similarly, tracheal or bronchial obstruction may develop by pressure from outside the lumen, due to a tuberculous enlargement of the hilar glands. This is fairly common in infants and children. Occasionally a gland ruptures into the bronchial lumen. Finally, the general thickening and distortion of the walls of the trachea and bronchi, produced either by healing ulcerations or contractures associated with the healing parenchymal lesion, is seen. The various collapse therapy procedures, especially pneumothorax and thoracoplasty, likewise cause a marked distortion of the bronchi. This is occasionally so marked that stenosis of a major bronchus occurs, producing a collapse of the lung distal to the obstruction which, if present over a long period of time, produces bronchiectasis.

Biplane Fluoroscopy. The removal of foreign bodies from the costophrenic angle or from upper lobe bronchi has always been one of the most difficult foreign body problems. Within recent years the development of the biplane fluoroscope has made it possible to remove a large percentage of these foreign bodies. The entire bronchoscopic procedure is guided in two planes by the fluoroscope. In a similar manner, forceps may be guided to a peripherally lying pulmonary tumor to obtain tissue for biopsy.[15]

Bronchoscopy in New-born Infants. In infants a day or two old, the mechanisms of bronchial obstruction are identical to those produced by the aspiration of foreign bodies. However, because of the small caliber of the bronchial tubes of infants, a very slight obstruction causes gross pulmonary changes which will endanger life.

In acquired atelectasis, the principal etiological factor mentioned so commonly in obstetrical textbooks is the aspiration of amniotic fluid and mucus during the passage of the infant down the birth canal. Bronchial suction with a catheter is almost a routine procedure, and it should be employed especially if mucus can be heard gurgling in the trachea. The use of the catheter is not without trauma, and one must constantly keep in mind the delicate nature of the larynx. More recently, aspiration by direct method, exposing the larynx with a laryngoscope and extending the aspirator through it, has given better results. One clinic suggests this as a routine procedure even before the child cries, aspirating all secretions from the mouth before they can get into the trachea and further into the alveoli. Bronchial exudates due to infective processes produce similar changes. These are characterized most outstandingly in cases of laryngotracheobronchitis in which frequent attacks of bronchial obstruction are one of the most typical features of the disease.

Bronchial obstruction due to compression from without the bronchus is occasionally caused by pressure from an enlarged heart or a congenital anomaly in which one of the great vessels crosses a main bronchus. We have observed a number

of these cases recently, together with cases of bronchial obstruction caused by congenital bronchial webs. Dilatation of the web resulted in immediate relief of symptoms in one 24-hour-old infant.

Summary

1. The bronchoscope serves as a speculum to permit the direct inspection of the tracheobronchial tree of a patient of any age.

2. Indications for bronchoscopy, which were formerly limited to the extraction of foreign bodies, have broadened so that now bronchoscopy is an accepted routine aid in the diagnosis and treatment of bronchial obstruction, suppurative diseases of the bronchi, and in the investigation of obscure pulmonary lesions. It is an addition to the armamentarium of the physician studying diseases of the respiratory tract, and not a substitution for other procedures.

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There are 2,000 economists in the government bureaus in Washington. Twenty-five years ago there were none. Top statisticians rate $5,600 a year. Others receive $2,000 a year up.

THE SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS

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Surgery is an important adjunct in the treatment of pulmonary tuberculosis. It detracts nothing from the sanatorium regimen but serves only to enhance its value in those cases whose disease requires more than mere rest for its control. Without the benefits of the santorium many patients might never become candidates for surgical procedures. When the sanatorium first offered an adequate rest program for the tuberculous the striking improvement in individuals established its soundness. These principles have not changed. The inclusion of artificial pneumothorax and surgical measures in the armamentarium of therapy has for its foundation the same principles. The diminution and disappearance of signs and symptoms, the closure of cavities, the stimulation of fibrous tissue, the relaxation for scar tissue shrinkage, the control of hemorrhage and the prevention of extension are all objects of sanatorium care singly or aided by collapse therapy.

In a review of patients who enter any institution for the care of pulmonary tuberculosis one finds a varying percentage of cases in different stages of the disease, the stage being evidence of the extent of their disease. In a group with the least disease the percentage of arrested cases will be higher than the advanced cases where rest alone is counted on to heal the process. Even in the best available statistics this rate of arrested cases is disappointing. It was therefore the directors of sanatoria themselves who sought additional splinting measures in order to artificially produce this needed rest to improve the late results in the arrest of pulmonary tuberculosis. Rest alone in the face of uncollapsed cavities for a prolonged period is fraught with disappointments. Spontaneous closure in such cases are the exception and extension of the disease will follow in the majority.

The wide acceptance of surgical procedures is evidence of its effectiveness. No conservative

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plan of treatment can be supplanted by major surgery unless it obtains superior results. This it has done in those cases of chronic disease with open cavities surrounded by thick walls with persistant positive sputum or recurrent hemoptysis uncontrolled by other measures, or the cases with a complicating sterile empyema or secondarily infected with or without active disease in the lung. All these cases were known to be hopeless until the application of surgery restored some to usefulness and improved others. Out of these results grew the indications and contraindications for thoracoplasty and its allied procedures, and still later the modification of the operation itself. Not only did the medical profession see its importance but the patients began to see a new hope which today borders on enthusiasm in some instances where their information is not tempered with judgment.

It is sometimes difficult to appreciate that as late as 1931 Alexander estimated that not more than 10% of all patients in sanatoria were receiving the benefit of collapse therapy. In a report by the National Tuberculosis Association in that year on 42,107 patients in 278 sanatoria, with an estimated 10% receiving collapse therapy 17% were arrested and 41% quiescent or improved. Against this group Anderson and Leslie record their work at the Michigan State Sanatorium where 72% were receiving collapse therapy: 47% were regarded as arrested or apparently arrested and 19% more quiescent or improved. One must remember further that arrest and not improvement is the goal in the control of pulmonary tuberculosis. The increase in collapse therapy including pneumothorax has been practically universal. Until surgical measures were advocated artificial pneumothorax was employed only in a relatively few institutions for the care of the tuberculous and then not widely employed. Artificial pneumothorax was given an added impetus by the accomplishment of surgical procedures. It is now instituted earlier in the disease because many cases presenting themselves for the first time for treatment indicate their need for collapse therapy without a definite period of observation and bed rest as a preliminary test. With this increase in the number of patients so treated there have been more cases in which the method has manifested its limitations. Adhesions may exist which will not hinder the ultimate collapse. Where they do exist and prevent closure of the cavity, thoracoscopic examination will determine whether they can be safely severed by cautery rendering the pneumothorax collapse effective. Jacobeus first suggested this in 1914 and only because of the increasing number of cases so treated has there been the opportunity to carry out more often his suggestion. The intrapleural examination may substantiate the clinical opinion that the pneumothorax treatment even though prolonged cannot bring about the desired result. A continuation of pneumothorax in such a case can only be of value to improve the patient's condition, if that be necessary for some other procedure, or to tide the patient over a period while a lesion in the contralateral lung becomes quiescent.

Phrenic nerve operations, thoracoplasty, extrapleural and intrapleural pneumolysis are the most common surgical procedures employed, exclusive of artificial pneumothorax, in collapse therapy. Other procedures accepted but less often used are scaleniectomy, multiple intercostal nerve paralysis, cavity drainage, lobectomy and pneumonectomy.

Operations on the phrenic nerve to produce hemi-diaphragmatic paralysis remain an excellent single, conservative procedure in bringing about greater rest and relaxation for fibrous tissue contraction. Where no free pleural space exists rendering pneumothorax treatment impossible it may be substituted. In not too extensive lesions it will in some be adequate to bring about healing more quickly and with more promise of permanent results. There has been a greater tendency toward crushing of the nerve to produce temporary nerve paralysis, which procedure may be repeated in three to six months if the condition of the lesion demands it. By this temporary paralysis we have in those cases, where it is not effective or where more extensive surgery is necessary, not lost the function of the muscle in respiratory movements later on; and particularly in bilateral cases we have not lost the opportunity of using it in the contralateral side if it seems warranted. Thus used it is comparable to artificial pneumothorax in that it can be recalled as a method of treatment when it fails to serve the purpose intended or when the need for it no longer exists. The adverse criticism of its usefulness has come most often where it has been employed in extensive old lesions

where another procedure was indicated, or where it should have included another procedure to adequately control the lesion. The improvement which so often follows even in extensive disease should not be misinterpreted as adequate unless clinical, roentgenological and laboratory findings substantiate an arrested condition.

Through the pioneer work of de Cerenuville, Friedrich, Brauer, Wilms, Sauerbruch and others the paravertebral extrapleural thoracoplasty became the operation of choice. Such an operation usually called for the resection of the upper ten or eleven ribs. It was Sauerbruch who cautioned that the procedure should begin from below to lessen the tendency of aspiration of secretions into the lower lobe. The earlier operations where the entire length of the rib was removed proved to be too shocking a procedure and the operation therefore became less radical and divided in stages. The resection of shorter segments, however, necessitated the removal of the lower ribs in order to obtain a relatively good collapse. The safety of the procedure beginning above was later established and Hedblom in this country urged strongly the multiple stage operation as a measure of safety, rendering its benefits to a much larger group. Though opposed in a measure on this point, today it is widely accepted in all cases. This operation resulted in one-third arrested cases, one-third improved and one-third worse or dying of their disease. These patients formed a group with open cavities who were certain to die of an extention of their disease within five years.

Not content with these early results of surgery those interested in this work began to question the large group of improved cases and the poor results. The degree of collapse could be pointed to in many instances for the failure of a cavity to become obliterated. Resection of the anterolateral segments followed and there was a striking improvement due to the increased collapse. The desirability of this complete collapse had very early been expressed by Brauer but its accomplishment was delayed by its great risk. The present operation considers the pathologic lesion and the procedure is so planned as to render adequate collapse to the cavitated area. This usually demands frequently the removal of the entire length of the first two or three ribs and shorter segments of one to four more. This may be done in two or more stages, the condition of the patient serving as a guide, but also the knowledge that resection of more than three ribs increases the hazard of the procedure. If a cavity lies close to the vertebral column its retraction into the paravertebral gutter is likely unless the ribs are not only removed up to the transverse processes, but flush with the bodies of the vertebrae and including the transverse processes themselves. The value of the overexposure plate often suggested by Lindberg cannot be overemphasized in revealing cavities in markedly scarred lungs while ordinary plates only show an opacity. In many patients who come to thoracoplasty the lower lobe was once infected but now is fibrosed. The cavity in the upper lobe remains as the offender in producing positive sputum. Its closure is necessary to bring about arrest of the disease. Since the contention of Sauerbruch to begin over the lower ribs is no longer recognized the function of the lower lobe is preserved, since the resection of the upper ribs in their entirety where indicated serves to close them in most instances. The preservation of the functioning lung tissue in the lower lobe has increasing importance where the disease has been bilateral. Furthermore, the necessity of the anterolateral resection becomes much less frequent though a procedure well tolerated and applicable in cases of a complicating empyema. As recent as 1933 it was difficult to learn of the value of the now accepted thoracoplasty. It was viewed with skepticism except in a limited number of cases. Yet this procedure today can claim better results, a lower mortality and a fewer number of operations for a given patient.

Alexander and Haight report upward of 88% of closed cavities with negative sputum; Coryllos reports 72% and O'Brien reported a group with 91% closed cavities. In the latter, the good results may be attributed to an earlier acceptance of the application of surgical collapse. These same authors report an operative mortality of 4.8%, 4.6% and 3.4% respectively.

Extrapleural pneumonolysis best accomplished by the use of paraffin fillng should have greater recognition for selected cases. In small isolated lesions, particularly apical, and where thoracoplasty might be considered too great a risk, the results may be very gratifying. The operation is well tolerated in bilateral cases or in those in the fifth, sixth or seventh decade of life. It should not be substituted for thoracoplasty as it

is done today, the latter offering more certain closure of cavities, particularly large ones. Some extend the indication as a preliminary procedure to thoracoplasty in large excavations of the upper lobe.

Preservation of the function of the lung is a prime consideration which allows the benefits of this form of treatment to be extended to many to whom it was formerly denied. The old operation of thoracoplasty had unilateral disease as one of its requirements, but the modern operation allows for the partial thoracoplasty on both sides. The avoidance of sacrifice of good lung tissue by the localized operation makes this possible. Furthermore, the temporary rather than the permanent hemi-diaphragmatic paralysis is directed toward this end. Jacobeus has shown the desirability of preserving this function. In a noteworthy paper, one of his last before his death, he demonstrated by the use of a double bronchoscope that patients who have undergone thoracoplasty may have considerable respiratory capacity in relatively well collapsed lungs. In some cases this approximated 50%. His experiments, carefully executed, were confirmed by the additional study of the gas analysis on each side —these determinations coinciding with the vital capacity of each lung. These important observations should lead to a choice of procedure or a type of thoracoplasty which avoids or allows for a minimum encroachment on good lung tissue.

Tuberculin testing, more general adoption of x-ray films of any chest complaint, and a recognition of the early symptoms remains an important factor if we are to avoid the frequency of these procedures. Until we do surgery will continue to be a valuable adjunct in the treatment of pulmonary tuberculosis.

With these changes which have been so recent, time may again alter our conception of the best approach to this problem. Last month Jones reported lobectomy in two cases and removal of the entire lung in two others for pulmonary tuberculosis. Others have previously been reported. Coryllos has opened cavities and used muscle grafts for their obliteration. Extrapleural pneumothorax is now gaining some consideration. All of these must be evaluated and given the test of time. However, collapse therapy has adequately established itself; only its application may change.

BRONCHIECTASIS

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A bronchiectatic state or condition is considered to exist when there is retention of bronchial secretions, due to partial or complete obstruction, of endobronchial or peribronchial character, the result of either mechanical or chronic inflammatory processes, producing dilatation of the bronchial structure, and with or without patches of atelectasis.

Due almost altogether to a lack of adequate drainage the condition tends toward progression with the formation of veritable pockets, saccular or cylindrical, containing purulent material and there are apt to follow recurring bronchopneumonic exacerbations which serve to extend the process into other lobes. Symptoms usually keep apace with lesion progression and, after early cough, which may have been the only recognizable symptom, there follows the symptomatic picture so characteristic of advanced bronchiectasis, including the pasty and septic appearance associated with frequent cough and productive of foul expectoration which is copious in amount. Treatment, prior to the era of thoracic surgery, included the advice to "Go West" where the patient practiced unsupervised, haphazard postural drainage measures, with or without heliotherapy, or vaccinotherapy. The prognosis was invariably poor, and death followed single or repeated hemorrhages, amyloid disease, bronchopneumonia, or more rarely, brain abscess.

Such progress has been made in this particular field that a newer concept of bronchiectasis has been brought about through the knowledge of the mechanisms of its development and revised criteria permitting of earlier diagnosis. Not only has there resulted a betterment of the prognosis, since either a cure or definite arrestation are possibilities, but the "bronchiectatic state" may in fact be prevented. This situation is somewhat analogous to that of pulmonary tuberculosis where newer and more accurate diagnostic procedures, together with supplementary surgical treatment measures, have considerably lessened

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the number who will reach the neglected or consuming stage. It is of considerable importance that criteria for diagnosing bronchiectasis undergo the same sort of revision as was found to be necessary in the diagnostic differentiation between the asymptomatic "early" tuberculosis and "consumption."

chiectatic dilatations. Early in the process the clinical state of the patient may be excellent and even expectoration reported absent. The plain film may reveal no abnormal densities whatsoever, or there may be observed markings far more extensive than suggested by physical signs or symptoms (Fig. 1). On the other hand,

CHART I
DIAGNOSIS OF PULMONARY LESIONS

1a. EARLY TUBERCULOSIS	1b. ADVANCED PHTHISIS (Consumption)
1. X-ray—Minimum Standards.	1. Symptoms—marked (subjective and objective).
2. Symptoms—slight or absent.	2. Sputum—positive for tubercle bacilli.
3. Physical Signs—slight or absent.	3. X-ray—corroborative only ("snow-storm").
4. History—contact.	4. Physical Signs—seldom absent.
5. Sputum—negative or positive.	5. History—wholly unimportant.
2a. EARLY BRONCHIECTASIS*	**2b. ADVANCED BRONCHIECTASIS**
1. History—frequent "colds"; chronic pneumonia.	1. Symptoms—characteristic, severe.
2. X-ray film—plain.	2. Physical signs—invariably.
3. X-ray film—with lipiodol instillation.	3. X-ray film—plain (triangle).
4. Physical signs—rales, chiefly basal.	4. X-ray film—lipiodol (corroborative).
5. Symptoms—may be absent, except for cough.	5. History—unimportant.

*With bronchial ectasias actually in evidence.

There is ample justification for considering bronchiectasis to be the most widespread of chronic pulmonary lesions. The majority of patients present a history of cough, productive or

lipiodol instillations may prove the absence of ectasias where there was suggestive involvement on the plain film. The characteristic film shadows are:

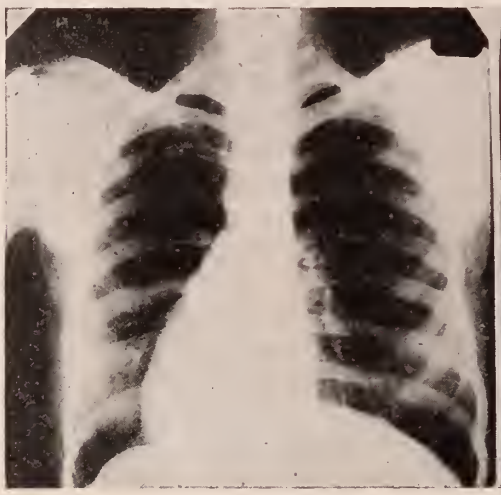


Fig. 1. The bronchovascular markings are everywhere within normal limits. (Lipiodol instillation revealed moderately extensive dilatations of the left basal bronchi.)



Fig. 2. Characteristic blurred basal mottlings are noted. The right hilum shadow is definitely soft.

otherwise, which has persisted since early childhood and presenting peribronchial infiltrations which suffer more or less frequent perifocal reactions, especially in association with recurrences of acute respiratory infections. Delayed resolution of secondary pneumonias resulting in chronic interstitial pneumonia or chronic pneumonitis form the other main sources of bron-

1. The atelectatic triangle (hypotenuse) (Fig. 2a) usually located in the region of the cardiophrenic angle overlying the inner half or two-thirds of the hemidiaphragmatic crest. (Lipiodol saccular filling may be noted through such shrunken lobe density.)

2. Scattered, and more or less diffuse, blurred soft shadows suggesting peribronchial inflamma-

tion with perhaps some extension to the contiguous parenchyma. These findings are most usually to be noted in one or more radiological zones just above the diaphragm with probably some accentuation in the cardiophrenic angle



Fig. 2a. As a late event a hypotenous triangle developed at the right base.

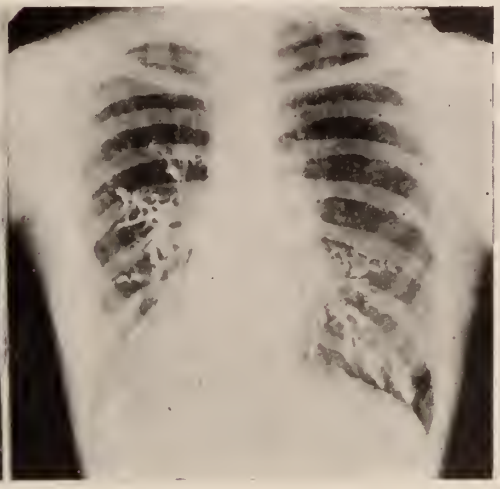


Fig. 2b. Saccular and cylindrical filling effects on the right with evidence of plugged bronchi on the left.

and the frequently encountered "soft hilum" shadow (Fig. 2).

3. The lipiodol film reveals saccular or cylindrical filling effects Fig. 2b but when reliance is had upon normal exposure type of films, important dilatations behind the heart shadow will be missed (Fig. 3 and 3a).



Fig. 3. Lipiodol instillation would be interpreted as presenting normal filling effects.



Fig. 3a. Over-penetration exposure high speed chest Bucky diaphragm pictures, however, reveal important sacculations behind the cardiac shadow.

Treatment is directed mainly to the necessity for providing frequent and adequate drainage. Bronchoscopy may precede the postural form especially for the purpose of facilitating drainage by the aspiration, or even irrigation, of mucoid or mucopurulent material. At the same time it offers the opportunity for direct visualization of the type and degree of lumen occlusion present, ruling out the small number (3 per cent.) of foreign body or malignant origin, cauterization of potential bleeding areas, etc. For the early case, if the drainage, through postural or broncho-scopic means is faithfully maintained until lipiodol instillations no longer reveal pooling of the material, and subsequent "colds" are managed to avoid sequellae, the prognosis becomes a

reasonably satisfactory one. Also necessary to the treatment of the early case is radical surgery of the paranasal sinuses, usually maxillary, which are involved in the majority of instances. Hemidiaphragmatic paralysis, through temporary or permanent phrenic nerve interruption (phrenicotomy or phrenic neurectomy, respectively) may, through facilitation of cough, aid in expectoration, i.e., provided that the resulting elevation does not hinder drainage through kinking of main stem bronchi. Pneumothorax is not frequently of value. Lobectomy is the operation of choice but should be reserved for those cases which do not respond to the other more conservative measures and when the disease has become a stationary process or is showing progressive tendencies. The mortality from this form of thoracic surgery is now sufficiently low so that if the disease is unilateral and not too extensive, it offers a definite opportunity for cure. It becomes an operation of necessity for the unilateral case with an advanced degree of involvement. Climatotherapy is helpful in avoiding bronchopneumonic exacerbations and perhaps exerting some favorable influence upon any residual sinusitis present, but, without adequate bronchial drainage, must be considered as having the same relative effect as in tuberculosis when "climate" is substituted for a regime of constitutional or local rest. Where the underlying condition is one of bronchopulmonary spirochetosis the fusiform and spirochetal organisms may often be successfully combated by the use of small doses (0.5 gm.) of neo-arsphenamine. With the exception of basal infections prior to the development of the physicopathologic state of bronchial dilatation, chemotherapy and vaccinotherapy are of questionable value.

SUMMARY

1. Bronchiectasis is the most widespread of diseases of the respiratory system but is still too infrequently diagnosed in its asymptomatic and curable forms.

2. This condition results chiefly from incomplete resolutions of repeated childhood respiratory infections, notably those following measles, influenza, etc., and prolonged convalescence from basal pneumonitis in the adult. Cough, which more or less persists from childhood, should be carefully investigated.

3. A negative "plain film" does not rule out this condition nor do "characteristic" markings, other than the hypotenous triangular shadow, serve as an absolute indication as to the presence or extent of the ectasias.

4. Lipiodol films must not be considered "negative" unless over-exposure techniques have permitted visualization of the main stem bronchi located behind the cardiac shadow. Lipiodol instillation of a portion of the tracheobronchial tree is a reasonably safe procedure when recognizing that active bleeding and acute lesions constitute the main contraindications for its use. Another factor which serves to minimize the chance for complications pertains to its administration, and it is recommended that the substance be instilled without warming, and promptly drained, posturally.

5. Bronchoscopy reveals the type of obstruction to the bronchial lumen and, by the removal of mucous plugs, through aspiration, permits of accurate culture findings. This procedure is also of treatment value when the individual is too ill for, or to facilitate, postural drainage.

6. Postural drainage, daily, practiced faithfully for a period of months or longer, as necessary, may cure or arrest the process if, at the same time attention is given to the correction of any existing sinusitis, hygienic care is provided, and there is avoidance or at least insurance of proper convalescence from the common cold.

7. Lobectomy is available for those whose progress fails to make satisfactory response to the conservative procedures and is definitely indicated as soon as this fact is determined.

8. Climatotherapy may combine an environment having a minimum incidence of respiratory infections with heliotherapy for a residual stage of paranasal sinusitis.

9. Specific therapy, chemical or vaccine, is only occasionally of value.

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PNEUMONIA IN INFANCY AND CHILDHOOD

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Pneumonia is a frequent disease in childhood, and, generally speaking, is associated with a high mortality. The classification of pneumonias in infancy and childhood is best made from the bacteriologic standpoint despite the fact that certain factors make this more difficult than in adult life. Most pneumonias in children are mixed infections and difficulty is often experienced in evaluating the role of the constituent organisms. However, it is quite uniformly agreed that classification according to the offending organism is most practical.

The incidence of pneumonia is high. While it is not easy to evaluate the morbidity from pneumonia, statistics of the Metropolitan Life Insurance Company would show it outranks any other infectious disease as a cause of death in people of all ages: between 1932 and 1937 deaths from pneumonia increased seven per cent. Frequency varies considerably with the economic status, poor hygiene, under-nutrition, and overcrowding contributing to its incidence. It is infrequent during the first months of life and has highest incidence in the first two years. Epidemics of the disease have occasionally been described in institutions, and commonly certain persons in a home where pneumonia exists harbor the homologous organism in their throats.

In pediatric practice it has long been recognized that certain illnesses predispose to pneumonia. Of these the common cold, influenza, measles and whooping cough are the most common. Scarlet fever is prominent only among the hemolytic streptococcic pneumonias. The preponderance of pneumonias secondary to influenza and the common cold are noteworthy. Jones[1] showed that a high death rate from pneumonia in children under five years was coincident with the 1918 influenza epidemic.

In all primary pneumonias the pneumococcus plays the leading role, and thirty-two types of pneumococci have been observed in the pneumonias of childhood. Bullowa and Greenbaum[2] have shown the important pneumococci in this age-period to be types XIV, I, IX, and XIX and the frequency of their occurrence is in that order. Type XIV is the most frequently obtained from infants under two years. It surrenders its dominance after the age of six years to type I. Type XIX is rarely seen after the age of six years.

Pneumonia in adults is usually of the lobar type and the same is true of uncomplicated pneumonia at any age. However, bronchopneumonia is more common in infancy and childhood due to the frequency of the predisposing diseases at that age period. It is probably the frequency of bronchopneumonia which makes the mortality so high in the young.

The pneumococcus may cause pneumonia of the lobar or broncho type. The child may become infected from a carrier or from contact with a patient who has had the disease. At other times a pneumococcus harbored in a throat assumes increased virulence and production of pneumonia is then favored by diminished resistance of the host induced by chilling and exposure or a cold. It is generally accepted that the route of infec-

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tion is through the respiratory tract. Some writers have maintained that lobar pneumonia is hemotogenous in origin but no experimental or cogent clinical or morphologic grounds have been presented to support such a theory.

Uncomplicated lobar pneumonia in a child most often has a favorable outcome, but during active stages of the disease the child appears extremely ill. The onset is as a rule abrupt, frequently with vomiting and often with a chill. Fever is usually high and sustained and the pulse is increased proportionately. Cerebral symptoms as convulsions, nuchal rigidity and delirium are rather common. The cheeks are flushed but cyanosis is less common than in adults. Unless bronchitis is present cough is not severe. Respirations are increased and in young children mucopurulent nasal discharge is frequent. Sputum is not seen in young children. Signs of consolidation appear at variable times, usually about the third day but occasionally not at all. The first signs are dullness and diminished breath sounds, at times with fine localized rales and a small area of bronchial breathing. The left lower lobe is most frequently involved and next in frequency are the right lower and right upper lobes.

Pain is common and depends largely on the amount of pleural involvement. Abdominal pain and tenderness often well localized in the right lower quadrant are not infrequent. It may be difficult at times to distinguish this pain from that of acute appendicitis. The high leucocyte count and high fever usually make the diagnosis of acute appendicitis unlikely but roentgenographic studies of the chest may be the only reliable means of differentiation. It should be remembered that occasionally pneumonia and acute appendicitis will occur concomitantly. Abdominal distention is a frequent feature of the disease and is probably a manifestation of general intoxication. At times the liver and spleen are palpable. A leucocytosis as high as 50,000 with predominance of neutrophiles occurs. As a rule the urinalysis is negative. Pneumococci appear in direct nasal smears but often with associated influenza bacilli or streptococci too. Pneumococcemia occurs at times but infants are not particularly liable to blood stream invasion by the pneumococcus, and the type of organism is more important than the age of the patient. Recovery is rapid and the fall in temperature may be by crisis, pseudocrisis or lysis. The active stage of infection is variable, usually five to ten days.

There are several typical clinical varieties of primary pneumonia. Frequently we have all seen acutely ill children with cough, grunting respirations, temperatures of 103° to 105° and perhaps subcrepitant rales or so-called pretubular breathing become symptom-free in a day. Whether these are pneumonias of short duration, an asthma with upper respiratory infection, or capillary bronchitis, it is hard to say. Wandering pneumonias run a prolonged course due to spread of the lesion from one area to another. The mixed types may show signs of both lobar and bronchopneumonia and are difficult to classify. Roentgenographic studies show fewer findings than physical examination might have suggested. Lobar pneumonia, especially in children, usually begins in the upper lung sections with a triangular area of opacity, with its base at the pleural surface and apex directed toward the hilus. This triangle sometimes invades a whole lobe giving it a diffuse opaque appearance, sharply defined from the healthy lung tissue by the interlobar septa.

Broncho and lobar pneumonia in childhood at times are not easily differentiated. Bronchopneumonia is generally secondary to some other infection. Pneumococcus bronchopneumonia and influenza bronchiolitis are the usual varieties of bronchopneumonia in childhood. The onset of bronchopneumonia is insidious with increase in the already existing symptoms, cough and fever. The fever pursues an irregular course, and cyanosis, rapid respirations and dyspnea are common. Cough may be severe but central nervous system signs are rare. The physical findings are not as definite as in lobar pneumonia. Rales are scattered throughout the lung areas or more often over one or both lower lobes. Slight dullness with a small area of tubular breathing in the interscapular areas is a common finding. The roentgen findings in bronchopneumonia consist of diffuse irregular mottlings of a section of the lung field with a tendency of the nodules to fuse together. This mottling does not always respect the interlobar boundaries and the florid lesion is always very irregular in outline. The leucocyte count is variable and, following whooping cough, may reach 200,000. The course varies

from a few days to several weeks and relapses are common. Recovery is usually by lysis.

Capillary or influenzal bronchiolitis is a condition not always easily differentiated from bronchopneumonia. Generally speaking dyspnea, rales and pulmonary emphysema are more prominent than in bronchopneumonia; also signs of consolidation are absent or later in development. In both diseases the influenza bacillus and pneumococcus are encountered jointly but in bronchiolitis the former probably predominates. In pneumonias due to the hemolytic streptococcus the disease is especially severe and the mortality is high, a scarletinal rash is common and a pleural exudate often develops rapidly. The fluid quite uniformly contains hemolytic streptococci.

Staphylococcus pneumonia is an uncommon but severe disease with no characteristic symptoms. Its most common complication is empyema and on autopsy material lung abscesses are frequently found. Friedlander's bacillus is an occasional cause of pneumonia in childhood as is the virus of psittacosis, the bacillus of plague, and the bacillus of glanders.

In interstitial pneumonia with involvement of the framework of the lung tissues the illness is chronic, fever is mild and the chest findings are less marked. There is lassitude and the roentgenographic studies are not characteristic but may show some of the features of atelectasis.

Lipoid pneumonia is a form of pulmonary consolidation, usually chronic, and follows the entrance of fats or oils into the lungs. The infants most often affected are weak and debilitated and the onset is insidious with retardation in growth and weight. The only time older children acquire this pneumonia is when they are comatose or have some local condition diminishing the cough reflex. Respirations are rapid and a slight cough and moist rales may occur; physical signs are most often posterior and on the right side. Repeated roentgenograms are the greatest aid in diagnosis, often showing a lumpy appearance with the greatest density near the hilum or the right side and the upper and posterior portions of the lung most affected.

Complications are less frequent in lobar than in bronchopneumonia. Otitis media is the most common complication in lobar pneumonia and may occur at any stage of the infectious process. Frequent examination of the ears by head mirror or otoscope is extremely important in the child with pneumonia. Empyema in lobar pneumonia may occur at any time, but occurs most frequently several days after the crisis and it is especially likely in type I infections. Failure of the temperature to return to normal or a remittent or intermittent temperature suggest their complication. Other causes of return of fever and persistent pneumonic signs are delayed resolution, lung abscess and tubercular pneumonia. Pericarditis, meningitis, peritonitis and arthritis occasionally occur. Delayed resolution is a troublesome complication at times associated with cerebral thrombosis.

Complications are more frequent in bronchopneumonia, and the most frequent are otitis media, diarrhea, bronchiectasis and empyema. Emphysema and pulmonary abscess are perhaps more common than usually presumed inasmuch as they are rarely diagnosed except at autopsy. Relapses occur in 20 per cent. of the bronchopneumonias and in 35 per cent. of bronchiolitis. Otitis media occurs in one-half of the cases of bronchopneumonia and one-third of the cases of bronchiolitis.

Laryngitis of a severe form necessitating tracheotomy is not uncommon in influenzal bronchiolitis; death in such cases is frequent. In streptococcus pneumonias empyema and otitis media are frequent; mastoiditis is most common in this pneumonia. In pneumonias due primarily to the streptococcus; peritonitis or pericarditis is usually associated with a fatal result.

The prognosis in pneumonia of childhood depends on the age of the patient, the type of predisposing illness, the variety of infecting bacteria and the presence or absence of complications. Generally speaking the outcome of lobar pneumonia is favorable in most cases. According to figures of Bullowa and Greenbaum, pneumococcic pneumonia is fatal three times as often in children under two years of age as in those older. At all ages bronchopneumonia is fatal more than twice as often as lobar pneumonia. Nemir, Andrews and Vinograd[3] showed that the highest death rate occurred in patients under two years with bronchopneumonia and in those infected with staphylococci or streptococci. In infancy the presence of pneumococcemia while predisposing to empyema does not have the same bad prognostic value that pertains to adults. In pneumonias after whooping cough with very high leucocyte counts the outcome is usually

fatal. Either a temperature that remains low or a low leucocyte count in a child seriously ill with pneumonia is an unfavorable omen. Too, severe cyanosis, cold hands and feet, and a soft compressible pulse are undesirable findings. There is reason for encouragement in the recent work with antiserum by a number of observers. Favorable results have particularly been observed in types I and XIV pneumonias.

In discussing treatment in pneumonia the important prophylactic measures will be but briefly mentioned. Undoubtedly many cases of pneumonia could be prevented by judicious care during an acute upper respiratory disease. Complete rest in bed for the febrile child with a cold and avoidance of chilling would often exclude the occurrence of pneumonia. The active treatment consists in assuring rest, maintaining the fluid intake, administration of supportive measures and the proper handling of symptoms and complications which may arise. There is still some question as to the ultimate part serotherapy will play in the pneumonias in pediatric practice. Cost of serum and difficulties of administration by the venous route are the two chief difficulties. However, judging from the reports and observations of others, serum, particularly in types I and XIV, should be used more generally. Today pneumococcus typing by the Neufeld method is simple and easily conducted with a minimal amount of equipment. Early administration of the serum has been stressed by all writers.

Rest is essential in pneumonia. Because of the prostration there is usually no difficulty in providing rest. At other times severe cough, delirium and convulsions occur. Generally speaking, codeine is most efficacious for the cough. Fresh air, while often helpful, may in the presence of bronchitis aggravate the cough and a steam kettle frequently gives more relief. Mild restlessness can be relieved by sponges and alcohol rubs and in more severe cases nembutal administered rectally has proved a valuable agent.

Convulsions may call for the use of chloral hydrate; occasionally convulsions may be a result of tetany and are treated from that standpoint. The fluid intake should be well maintained. Fruit juices and gingerale are often more acceptable and better retained than water. In the absence of abdominal distention small retention enemas given every three or four hours are helpful in increasing the liquid intake. At times it is impossible to administer adequate liquids except by intravenous or subcutaneous routes, and either five or ten per cent. glucose solution in saline may be used. The color and concentration of the urine are good indices as to adequacy of liquid intake. Arena[4] has shown the value of blood transfusion in selected cases of pneumonia and while pneumonia has often been considered a contraindication for blood transfusion that idea has little basis. No definite explanation for its beneficial effect has been suggested, but frequently severe dyspnea and cyanosis are improved by it. Streptococcic pneumonias should have transfusions early. Sulfanilamide may prove of value in certain of the pneumonias but there is not enough data regarding its use in pneumonia as yet.

Children with pneumonia are subject to superinfection and should be isolated, and special care taken to prevent their contact with infections of other types, particularly streptococcal. This is true both at home and in the hospital. Daily examination of the patient is important. Otitis media and empyema are treated as they arise. Cyanosis and dyspnea are best treated by oxygen, the tent being the means of choice although there are other methods.

Promiscuous use of enemata is contraindicated. These must at times be used to evacuate the bowels and for fever. When distention is present stupes may be employed and if the distention is intractable some complication is probably present and should be looked for. Stimulants are rarely necessary except in collapse when adrenalin in doses of two to five minims may be used. Caffein sodium benzoate and coramin are also excellent stimulants. Whisky has a place, many think, particularly in weakened and debilitated children. Local applications such as counterirritants have largely been discarded. In the absence of tympanitis mild laxatives as mineral oil or milk of magnesia are preferable to enemata. Frequent enemas are harmful and drastic purges definitely contraindicated.

Tympanitis is probably a manifestation of general intoxication and is a grave sign. Ordinary enemas and stupes may control the distention but occasionally glycerine enemas and pituitrin are necessary. All cases of pneumonia in children do not need hospitalization. In severely ill cases and where transfusion, oxygen and other

procedures are indicated, the hospital care is most satisfactory.

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THE DIFFERENTIAL DIAGNOSIS OF PULMONARY LESIONS FROM THE ROENTGEN STANDPOINT

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It is a well established fact that some pulmonary lesions may be associated with pathological changes whose roentgenologic manifestations cannot be correctly interpreted in relation to disease entities without the help of information derived from other sources. On the other hand many of them produce symptoms and signs, which can lead to a correct diagnosis only with the aid a roentgen examination can furnish. It is the purpose of this paper to present some of the more commonly encountered conditions of this nature and demonstrate how the roentgen findings may serve in their differentiation.

Before discussing the differential aspects of these lesions it may be well to review briefly the anatomic basis upon which visualization of the various lung structures roentgenologically depends, and how these shadows may be altered by pathologic processes involving the different constituents which enter into its make-up. The relative radiolucency of the lung fields which makes it possible to demonstrate pathologic processes there which cannot be visualized elsewhere depends almost entirely upon the air content in the alveoli. It is generally recognized that the hilum shadows and linear markings are summation densities of which the blood vessels with their contents furnish the major portion and the bronchi, interstitial tissues, and lymphoid structures are contributing factors. The amount of these shadows is largely dependent upon technical factors, and exactly what constitutes a normal image is in great measure a matter of individual impression rather than a standard concept.

Pathologic changes involving any one of the lung structures or a combination of them may result in density variations demonstrable roentgenologically, which, by their distribution, extent or nature may be ascribed to definite disease processes. Thus appreciable increase of the hilum shadows, linear markings, localized or generalized replacement of air content by cellular or fluid accumulations in an irregular or diffuse and sharply circumscribed manner, disintegration of lung tissue of variable extent and other alterations or additions to the normal lung shadows, may permit of deductions or inferences upon which probable diagnoses may be based.

Differential diagnosis from the roentgen standpoint must of necessity be based upon deviations from the normal. One of the chief difficulties encountered in connection with lung examinations is the fact that previous diseases involving the respiratory tract may have left residual changes which have absolutely no relation to existing symptom-producing lesions. Some of these changes may be readily recognized; others may be of such a doubtful nature that their significance is questionable as far as their relationship to active pathology is concerned. An interpretation of "increase of hilum shadows and linear markings" may justifiably be made in connection with almost every adult chest. In view of this fact it seems warranted that importance be attached to these findings only when such changes are markedly at variance with average observations.

A few words on roentgen technique in relation to differential diagnosis may be apropos. To be reliable the examination should be thorough. A single film may be adequate only in the more obvious lesions. Whenever possible, fluoroscopic observations should precede the film examination so that both static and functional variations may be ascertained. The screen examination can determine the planes in which pathology may be best demonstrated on the film, and indicate the need for exposures at different angles or varying densities. Lateral exposures are frequently indispensable, and sometimes questionable findings on the original examination may require check-

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up observations for confirmation. Repeated exposures at intervals to show progressive changes may be necessary before definite conclusions can be reached. Ordinary examinations may suggest the need for special procedures for differential purposes such as iodized oil injections, paracentesis or artificial pneumothorax.

Acute conditions with typical manifestations seldom require roentgen studies for their recognition, but when they are atypical or occur under unusual circumstances the help which such studies can give may be essential for correct diagnosis. Acute bronchitis, foreign body aspiration, the pneumonias, acute pneumonic types of tuberculosis, acute miliary tuberculosis, postoperative atelectasis, pulmonary infarcts, pleurisy with or without effusion, spontaneous pneumothorax and pulmonary congestion and edema, may all originate under conditions when a roentgen examination may be indicated for differential diagnosis.

Acute bronchitis, by its essentially negative roentgen findings, readily identifies itself by contrast with the positive ones in practically all of the other conditions mentioned. The hilum shadows and linear markings may be increased, due to the inflammatory congestion and secretion formation associated with it, but this may so closely approximate the average as to be indistinguishable from it in the absence of comparable films of the same chest prior to the onset.

In the case of suspected foreign body aspiration the roentgen examination may, of course, give unequivocal evidence if such a body is directly demonstrable. Non-opaque bodies which partially or completely obstruct a bronchus may also give reliable information in the form of an atelectasis or obstructive emphysema. In infants, and exceptionally even in adults, the onset of an acute cough without satisfactory clinical explanation should suggest the possibility of foreign body aspiration as a cause, and lead to a thorough and adequate roentgen study.

The pneumonias may occasionally require roentgen studies at time of onset or in the acute stage for determining their presence or nature. The frankly lobar type is usually easily distinguished by its localization. When it occurs postoperatively it may be differentiated from postoperative atelectasis by the fact that there is no mediastinal shift towards the side of the density or other change commonly associated with the latter condition. Pleurisy with effusion, which may cause densities comparable to those of a massive pneumonia or massive collapse, causes mediastinal pressure displacement away from the density by which it may be readily recognized. The acute lobar type of tuberculosis may exactly duplicate the findings of an ordinary lobar pneumonia at its onset, but a roentgen examination in the later stages can usually differentiate easily between resolution changes of the latter and progressive changes of the former.

The bronchopneumonias present irregular bilateral mottling which ordinarily is sufficiently characteristic to be diagnostic. However, acute tuberculous bronchopneumonia may simulate it closely, but the fact that in the latter there is a predilection for involvement of the upper lobes and associated evidences of a pre-existing tuberculous lesion are usually present, may serve to differentiate them.

Pneumonic infarcts in their early stages or when small may produce no characteristic changes. When demonstrable they may be recognized by a diffuse density which has its base at the periphery of the lung and tapers off gradually in a wedge-shaped manner towards the hilum.

Acute miliary tuberculosis when it presents typical minute soft densities uniformly distributed throughout both lung fields need rarely be mistaken for any other condition. Most other small disseminated densities in the lung fields such as may occur with carcinosis, pneumoconiosis, aspergillosis, syphilis with miliary gummata, or healed miliary tuberculosis, are definitely larger or nodular, less evenly distributed or denser due to lime salt impregnation.

Acute pulmonary congestion and edema may usually be recognized by the marked bilateral increase of the hilar shadows and tapering increased densities of the linear markings extending into the parenchyma, often most prominent towards the bases of the lungs. If there is associated edema the picture is usually obscured by a hazy blurring adjacent to the areas of increased density.

Acute pleurisy ordinarily gives no roentgen findings of value, but an examination made when it is suspected may reveal associated intrapulmonary pathology or the presence of an unsuspected spontaneous pneumothorax whose presence may be easily recognized by the appearance of

the collapsed lung and a lung-free air-containing pleural cavity.

In subacute pulmonary lesions or sequellae of the acute ones the need for roentgen examination is far greater than in acute ones to determine the nature of the lesion. Conditions which start acutely with typical manifestations justifying a clinical diagnosis of a particular disease may be unduly protracted, or new symptoms may develop suggesting either a faulty primary diagnosis or the development of complications or sequellae. In these cases the roentgen findings frequently are of the utmost value.

A postoperative cough simulating a bronchitis may be the precursor of a pneumonitis or lung abscess and the roentgen examination is of great value in its detection. The more or less limited area of increased density with subsequent liquefaction and cavity formation showing a fluid level with air above it is hardly to be mistaken for any other condition. Where abscess formation occurs following pneumonia the findings may be complicated by residual changes of that condition, but even there the changes are usually sufficiently characteristic to be diagnostic. Tuberculous cavities rarely present findings which are apt to be confused with ordinary abscess. Other changes of a tuberculous nature are usually associated with it; the cavity often is surrounded by a dense area of fibrous tissue and rarely contains demonstrable fluid accumulations. Abscesses developing in connection with bronchiectasis usually occupy the bases of the lungs. They are accompanied by more or less characteristic changes of the bronchiectatic process and seldom present as definite abscess cavities. Bronchogenic carcinoma with central necrosis may present findings almost identical with those of an ordinary abscesss, and not infrequently their true nature is discovered only at operation or autopsy. However, in the majority of these cases the carcinomatous nature of the process is evidenced by the greater density of the surrounding tissue which also is more circumscribed.

Localized emypema cavities may at times be extremely difficult to differentiate from abscess cavities, especially if the source of infection is a gas-producing bacillus or if there is an associated bronchial fistula which permits air to collect above the localized pus accumulation. When both abscess formation and empyema exist simultaneously the establishment of this fact may require considerable ingenuity in examination methods to demonstrate that fact. Iodized oil injections may be of value in some of these cases.

Congenital lung cysts may present pictures strongly resembling those of abscess formation. The demonstration of a thin-walled limiting membrane and absence of inflammatory changes in the surrounding structures is usually sufficient for identification.

Pneumonic processes deviating from their usual course may present a variety of findings on the roentgen examination which may clear up the reason for such variations. It may demonstrate a slowly progressive type of infection with spread to successive areas. Delayed resolution with tendencies towards a chronic interstitial pneumonia may be in evidence. Abscess formation or gangrene may be revealed by it. The latter may be recognized by the presence of complete disintegration of the lung area involved. It may demonstrate the pneumonic process to be of tuberculous origin by the irregular dissolution and cavity formation. Massive emypema may be shown by diffuse overshadowing of the lung fields with mediastinal displacement or an encysted accumulation of pus may be demonstrated by localized densities. A foreign body which may have been obscured previously by the densities of the inflammatory infiltrations may become visible when these have disappeared or become less marked.

Chronic pulmonary lesions probably offer the most important indications for roentgen examinations for differential diagnosis. Chronic bronchitis, bronchial asthma, emphysema, bronchial stenosis, bronchiectasis, pneumoconiosis, pulmonary congestion, pulmonary tuberculosis, syphilis, mycotic infections, lung tumors, and pleuritic lesions, as isolated or co-existing conditions, may all present similar symptoms and signs which may render their clinical recognition difficult or impossible. In some of them the roentgen examination adds little to the clinical diagnosis other than to rule out the presence of associated lesions. In most of them, however, it presents conclusive evidence which may confirm or establish the diagnosis.

Chronic bronchitis and bronchial asthma commonly present increase of hilum shadows and linear markings due to an interstitial fibrosis, but this may be identical with similar changes

due to other causes. The greatest value of the roentgen examination in connection with these conditions lies in being able occasionally to demonstrate the presence of other lesions which may be responsible for the symptoms present. This also constitutes a valid reason for examination of cases of emphysema where the cause for it is questionable.

Bronchial stenosis may present a variety of changes depending upon the degree of obstruction and the cause for it. Where the obstruction is complete atelectasis occurs which causes the area of lung involved to become dense, and secondarily results in a mediastinal shift towards it. Where the condition is due to an opaque body or to a tumorous mass in the lungs or mediastinum these causative lesions may also be in evidence. If the obstruction is partial or valve-like it may produce an obstructive emphysema which may be readily diagnosed by observations made during inspiration and expiration when shifting of the mediastinum is observed due to the varying pressures on the two sides. Iodized oil injections into the bronchi may give additional information by visibly outlining the areas of obstruction or giving other information.

Bronchiectasis, unless associated with other lesions of which it is a part or complication, may readily be recognized even on plain films when fairly well advanced. A predilection for lower lobe involvement, increase of hilum shadows and linear markings with irregular densities obscuring the heart and diaphragmatic outlines is almost pathognomonic in typical cases. Even though the diagnosis may be fairly certain bronchography is usually indicated for confirmation and additional information relative to extent and nature. Although increase of hilum shadows and linear markings is a constant accompaniment of practically all cases, this constitutes the lease reliable sign for diagnosis and it must usually be checked by an iodized oil injection for verification. An atelectasis which has been present for a considerable time and which may be recognized roentgenologically as a dense triangular shadow adjacent to or behind the heart with secondary cardiac displacement is almost always accompanied by a bronchiesctasis within it as may be demonstrated by bronchography. An unexplainable cardiac shift should be suspected of being associated with this combination of lesions and even in the absence of demonstrable atelectasis an iodized oil injection is indicated if a chronic productive cough is present. Consolidations of the lung which may be readily recognized as more or less regular, localized densities, be they of atelectatic or other origin, sooner or later develop bronchiectatic changes unless they are in the nature of solid neoplasms. Here also the iodized oil injection can give valuable aid in differential diagnosis. Localized or encysted pleural effusions may sometimes simulate an atelectasis or other consolidations but their shape, location and secondary manifestations ordinarily serve to make the differentiation. A bronchiectasis associated with pulmonary tuberculosis or abscess formation invariably requires an iodized oil injection for its demonstration.

Pneumoconiosis, of which silicosis is the commonest representative, is one of the most frequent conditions in which roentgen findings are relied upon for differential diagnosis. In the early stages, characterized mainly by interstitial fibrosis with increase of hilum shadows and linear markings, the condition may hardly be identified with certainty from the roentgen appearance. Later, when the typical soft nodular densities appear mainly in the middle lung fields with the absence of calcification or lung findings characteristic of some other pulmonary lesion, the findings are quite conclusive. Still later when confluence of the nodular densities has occurred to form irregular dense patches, absence of involvement of the apices and the presence of remaining more or less discreet densities usually permits of differentiation from tuberculosis which it may resemble closely. Where the two conditions coexist as not infrequently occurs, calcification, cavity formation or apical involvement together with the more or less distinctive findings of silicosis may serve to establish the fact.

Passive pulmonary congestion may be associated with marked increase of the hilum shadows and linear markings, but these can usually be distinguished from similar changes due to interstitial fibrosis by their tapering extensions into the lung field and less sharply defined contours. The presence of cardiac changes or evidences of fluid accumulations in the pleural cavities or interlobar fissures may simplify the differentiation.

The differentiation of pulmonary tuberculosis enters into practically every chronic lung lesion from the roentgen standpoint. The problem is

complicated by the frequent occurrence of evidences of old healed tuberculous processes in the form of calcification and fibrosis which may or may not be associated with activity. The varied manifestations it presents depending upon the type, stage of development, predominating pathologic changes and possible complications may simulate, roentgenologically, not only the conditions previously considered but a variety of others.

Hilum tuberculosis during the active stage of development may usually be recognized by soft glandular enlargements in the hilar regions with more or less irregular extension of increased densities into the parenchyma. Acute pneumonic processes may resemble it, but rarely if ever do chronic lesions present the same picture. In the later stages more or less fibrosis and calcification may occur which also leads to fairly characteristic pictures.

In the adult type of tuberculosis the presence of soft fan-like densities in the apices or infraclavicular spaces offer little difficulty in differential diagnosis. Multiple soft irregular densities mainly in the upper lobes likewise are quite characteristic. When they occur in the lower lobes the interpretation of their being of tuberculous origin is less certain and iodized oil studies may be needed to distinguish them from bronchiectasis. Confluent tuberculous infiltrations may cause extensive areas of irregular consolidation, at times assuming lobar configurations, but their appearance rarely leaves much doubt of their nature. The presence of localized radiolucent areas within the areas of infiltration renders the probability of the process being tuberculous more certain. Mycotic infections may produce pictures almost identical with tuberculosis, and only the demonstration of the organism may serve to differentiate them. Exceptionally, blastomycosis may be recognized in spite of the similarity of findings by its tending to spread to the surrounding bony structures which may be evident in the films. The lymphoblastomata also may produce infiltrations in the parenchyma which may be indistinguishable roentgenologically.

Tuberculosis of the fibroid type rarely causes much trouble in its recognition. The presence of more or less extensive, irregular dense shadows especially in the parenchyma of the upper lobes with evident traction displacement of the mediastinal structures, together with the frequently associated shadows due to cavity formation, presents a picture which leaves little doubt as to the nature of the condition. A chronic interstitial pneumonia is more likely to be localized and the changes usually are much less marked and irregular. Some cases of bronchogenic carcinoma may present confusing shadows, but these also are usually more limited and less likely to be associated with evidences of inflammatory reactions. Fibroid phthisis as well as other lesions of an indurative nature may be accompanied by localized areas of emphysema resulting in circumscribed areas of increased radiolucency. These seldom present the appearance of abscess or other cavity formation, and realization of the possibility is usually sufficient for their differentiation.

Pulmonary syphilis fortunately is uncommon and rarely enters into the question of differential diagnosis. It may occur in the form of an infiltrating fibrosis resulting in an increase of the linear markings or multiple gummata of variable size producing nodular or tumor-like shadows which are ordinarily ascribed to some other condition. It is only when they occur in a syphilitic in whom the suspected lesions can be ruled out, and when the shadows disappear after antiluetic treatment, that their identity may be accepted as established.

Pulmonary tumors form another group of lesions which are readily demonstrable roentgenologically, but frequently present difficult problems both in differentiating them from each other or from other pulmonary conditions which they may simulate. Benign tumors are of rare occurrence and are usually thought of as possibilities when a single sharply outlined dense shadow presents itself within the lung fields which shows very little tendency to growth as revealed by interval examinations. An iodized oil injection or diagnostic pneumothorax may serve to demonstrate its intra-pulmonary origin and thus differentiate it from a benign thoracic wall tumor or an encysted fluid accumulation.

Bronchogenic carcinoma may present a variety of pictures depending upon its type, location, extent of development and complications, because of which variations it may resemble many other conditions. It may develop as an infiltrating growth and produce irregular densities extending into the parenchyma from the hilum region, or it

may form numerous small nodular masses or a single large one in the parenchyma. It may occlude a bronchus and cause an atelectasis, extend to the pleura and result in fluid accumulation in the pleural cavity, or invade the surrounding bony structures. It may undergo a central neurosis or become gangrenous. All of these possibilities produce more or less characteristic roentgen images of the particular pathologic process, and a combination of them may suggest the nature of the causative lesion, but bronchoscopy or biopsy examinations are usually required for accurate interpretation.

Metastatic tumors, when they present themselves as multiple localized soft tissue densities in the lung field, as is usually the case, are very easy of recognition. Sometimes, however, they occur as infiltrations or nodular growths in which case only a knowledge of an associated primary malignancy will suggest their real nature. They, too, may be associated with complications similar to those of bronchogenic carcinoma which may obscure them or make their recognition impossible.

Finally pleuritic conditions occurring as independent or complicating lesions may have an important bearing on the differential diagnosis of pulmonary lesions. Adhesions, pleural fibrosis or calcification, localized or generalized fluid accumulations, and rarely tumor formation, may all serve to complicate the picture and require the utmost skill in their detection. Similarly, lesions of the structures in the mediastium may simulate lung lesions, or vice versa, and may have to be differentiated.

In conclusion it may be well to emphasize the fact that the differential diagnosis of pulmonary lesions roentgenologically in practice is far from being the seemingly easy thing it is in theory. The separation of residual changes due to previous pathological processes from recent or active ones may tax one's skill to the utmost and then be impossible. Coexisting lesions may so modify the picture ordinarily presented by either one alone as to preclude the possibility of determining the presence of either one of them with certainty. In the diagnosis of pulmonary lesions the need for correlation of the roentgen findings with information to be obtained from other sources is probably more essential than in any other field of medicine if accurate and reliable interpretations are to be made.

INTRADERMIC IMMUNIZATION AGAINST SCARLET FEVER

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In 1924 the Dicks elaborated their scarlet fever toxin. The standard of measurement they called a Skin Test Dose, which is the amount of toxin injected into the skin which will produce an area of redness 1 to 2 cm. in diameter. Up to this time, St. Mary's Training School, an orphanage numbering 700 to 800 children, had been frequently visited by this disease. Early in 1924 I gave the test to 794 children with material prepared by Dr. Gladys Dick. The results were almost tragic. Within 24 to 48 hours we had two dormitories full of very sick children. Many arms were red and swollen from fingers to shoulders, two were in convulsions all day and 25 or 30 developed abscesses. However, the unwearying Dick family kept on and definitely showed that their toxin would not only determine the immunity status, but would also actively immunize humankind if given in proper doses, properly spaced. These doses have been increased so that for the last few years they have recommended 115,000 S.T.D. in five divided doses a week or so apart. These five doses will immunize about 90% for several years.

Notwithstanding the success of this method of immunization the rank and file of the medical profession have been slow to practice it. I recall that diphtheria prevention met the same opposition in the early years. About the time that Park and Zingher had shown the efficacy of T.A. mixtures for prevention of diphtheria, I offered to test Dr. Billing's and Dr. Babcock's grandchildren. After consulting a high priest of pediatrics, who told them it was dangerous, they refused. However, later I gave the injections to Dr. Babcock's grandchildren.

The hesitancy of the profession in taking up scarlet fever prevention is due to two causes: first, because this disease has been mild in type the last few years. However, it is estimated that 50% of the mild cases are followed by ear, kidney, or heart trouble. Certainly such a disease, numbering around 22,000 cases a year in Illinois, merits attention. The other deterring factor is the number of injections prescribed

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by the Dicks, and the unpleasant local and general reactions which often attend these subcutaneous injections.

It has been known for years that the skin has a biologic function in addition to its mechanical or protective function. Tuft immunized individuals against typhoid by intradermic injections of small doses of typhoid vaccine more effectively than by any other method. Goldman, Hershberger and others have actively immunized rabbits, and also humankind, against the three types of pneumococcus infections by the intradermal injections of the respective vaccines.

Robinson, of West Virginia, and Veldee of the Public Health Department, have shown that about one-tenth of the amount of the toxin prescribed by the Dicks, if given into the skin, promises to be as effective as the large amount given subcutaneously, and is unattended by unpleasant local and general reactions. Equally interesting is the probability that this smaller amount may be given in three, or perhaps two, divided doses.

This method appealed to me, and since the resulting immunity is probably in proportion to the amount of toxin given, I tried increasing amounts for the first dose. I found that 1,600 S.T.D. is about the most that can be given for the first dose, 4,000 S.T.D. for the second dose and 8,000 to 10,000 for the third and last dose. It is not difficult to measure these doses directly from the little bottles of toxin prepared under the odious Dick patent. They should be spaced two to three weeks apart.

I give these injections on the outer side of the arm above the elbow. I have now given over 500 intradermic injections in doses from 50 to 9,000 S.T.D. without unpleasant local or general reactions excepting one girl who had a fever of 101° for a day.

At one time I gave a group of 54 children three doses, 800-4,000-8,000 S.T.D., respectively. A retest showed 87% negative. I gave another group of 61 children 1,600-4,000-8,000 S.T.D. The retest resulted the same—87% negative.

Sufficient time has not elapsed to say how long the immunity resulting from intradermical injections will last. In all probability it will last for years.

It seems there may be other advantages in the use of scarlatinal toxin, for Levison has reported that pooled or individual convalescent scarlet fever serum has been used with benefit in the treatment of diverse streptococcus infections. If this is so, it requires no stretch of imagination to assume that a person actively immunized against scarlet fever may be less susceptible to other streptococcus infections.

This contention is supported by the laboratory study of hemolytic streptococci which shows that the toxins of many strains are neutralized by scarlatinal antitoxin, and are so nearly related that they cannot be differentiated qualitatively by any known test.

I fail to see the consistency of those who recommend immunizing nurses, orphanages and other institutional life but do not employ it in general practice. Scaret fever is the same disease in the home that it is in an institution. It spreads from child to child and from family to family.

The family doctor and pediatrician should take an interest in the technique of intradermic injection not only for its use in scarlet fever, but because the future may make use of this procedure for the cure and prevention of other diseases.

All children should be Dick tested even if the susceptibles are not immunized. It is certainly important for parents to know the immunity status of their children. All susceptible children should be immunized.

MEDICAL TREATMENT OF PATIENTS WITH JAUNDICE

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When a patient presents himself with icterus or jaundice one of the important clinical considerations is to decide whether the icterus is of biliary or extrabiliary origin, meaning by biliary origin anything that has to do with the liver or extrahepatic bile passages. If one bears in mind that bilirubin is formed in the reticuloendothelial system and brought to the liver by means of the blood stream, and in its passage through the polygonal cells of the liver it is dissociated with its protein radicle as measured by the van den Bergh test, then the differential

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diagnosis of jaundice becomes relatively more simple.

We therefore mean by the extrahepatic form of jaundice that form which has nothing to do with the liver per se, but which has to do with a more rapid formation of bilirubin than the liver is able to take care of, and the liver threshold for the secretion of bilirubin is not raised. This excess of bilirubin, accumulating in the blood stream, produces a type of jaundice which discolors the skin but unless there is a superimposed infection it does not discolor the urine. This type is commonly found in hemolytic conditions which are familial or acquired, and frequently follows trauma with resulting hematomas. This condition gives a classically indirect van den Bergh, and it does not primarily concern our discussion this morning. However, the form of jaundice which is associated with bile tract disease is the most common form, and it is not my purpose to go into the differential diagnosis of the cause at this time, but merely to emphasize that frequently there is a biphasic van den Bergh and an icterus index as a rule above 20. When the bilirubin content of the blood stream gives an icterus index below 20 and no clinical evidence of jaundice, we term this condition "latent jaundice."

Obstructive hepatic jaundice was previously thought to be the more common cause of jaundice. However, with our increasing knowledge of liver disease, we find that toxic and infectious jaundice are the more common forms. In other words, mechanical obstructive or regurgitant jaundice is certainly not as frequent as toxic, infectious, or retention jaundice. By far the most common cause for the toxic and infectious type is cholecystitis. It is to be remembered that you cannot have gall bladder disease without some corresponding degree of hepatitis. Jaundice in this condition is associated with two factors: first, that the parenchymatous involvement of the liver raises the liver threshold for the secretion of normal serum bilirubin, and therefore some of it is retained in the blood stream, and that which does pass through the polygonal cells may find some obstruction in the finer bile capillaries or ducts and is again forced back into the general circulation either through absorption in the lymphatics or blood stream.

It is therefore reasonable to assume that in gallbladder disease with jaundice we have definite evidence of liver impairment. This impairment may subside with the subsidence of the gallbladder pathology or healing may take place by connective tissue changes and produce a mild to severe form of cirrhosis. Liver damage, associated with this and other conditions, is the reason for this presentation this morning.

When a patient is disabled with jaundice and you have ascertained that it is due to liver and associated organ involvement the problem that next concerns you is how much liver damage have you. Numerous liver functional tests have been suggested. However, all of them except those which have definite physiological significance are open to some clinical criticism as to their correctness in evaluating liver pathology.

I am sure that many of you have seen a liver that is riddled with a carcinomatosis give a normal or near normal liver functional test with one of the dye methods. The physiologic methods of evaluating liver function are for clinical purposes three in number: first, the amount of bilirubinemia; second, the cholesterol ester fraction of total cholesterol; third, the total serum protein and albumin globulin ratio. We have discussed the first physiologic observation. The esterification of cholesterol is known to go on in the liver, the so-called ester "sturz." In liver damage, the cholesterol ester fraction of total cholesterol is markedly diminished. Approximately 70% of the cholesterol in the blood stream is the form of cholesterol ester, and when it goes below 50% it is indicative of definite liver damage, so this should be a routine observation in cases of patients with jaundice. Normally the relation of albumin to globulin in the blood stream is four or three to one. In cases of liver damage this may be on a one to one basis or even the globulin on a two to one basis. This has been taken as definite evidence of liver damage. However, it is to be remembered that in protein loss, particularly with nephrosis, a similar relation of albumin and globulin ratio may be brought about.

Further, there has been some discussion as to the relation of calcium to liver disease. However, evidence of this at the present time is controversial. If, then, we have a patient who has jaundice and we know that we are dealing with liver damage, the problem that confronts us is how should we manage this patient and what

should be our criteria as to improvement in the patient's condition.

In order to understand the therapeutic approach to this problem the physiology of the liver and its metabolism must be borne in mind. It is well known that the liver is a storehouse for glycogen and that it receives its sugars to be metabolized into glycogen from the intestinal tract. Whether this sugar is absorbed with phosphatase is of no consideration here this morning. The very fact that the liver can take up the sugars absorbed from the intestinal tract and metabolize them is evidence of liver function. It seems that when the glycogen content of the cell is diminished that other associated functions of the liver are also involved. When this damage occurs apparently the liver threshold for the utilization of sugars from the gastro-intestinal tract is also impaired.

For these reasons, it is important to do everything one can to give the liver a higher store of sugar. In order to do this two factors are of importance: one, the total amount of sugar given; two, the rate at which sugar is given. It has been found that in the damaged liver the rate of sugar administration, that is, the concentration of sugar in the blood, is much more important than the total amount in getting sugar into the liver. For this reason and others, it has been found, both clinically and experimentally, that giving glucose intravenously to patients is a much better method than trying to resort to absorption from the gastro-intestinal tract. The sugar then reaches the liver in a much higher concentration than would ordinarily happen through the normal mechanism of absorption.

In my experience I use 10% glucose with or without saline and give it at the rate of 30 drops per minute intravenously. I do not give it too rapidly as I think that the increased load on the heart will sooner or later lead to right ventricular failure which, in turn, will produce a passive hyperemia of the liver, and which, in turn, will defeat the very purpose that you are trying to improve. I cannot too strongly urge you to be conservative in the rapidity of the rate of flow of intravenous solutions. Insulin has been given by some with intravenous solutions, but in a patient who is a nondiabetic there is no indication for the use of insulin. The normal metabolic factors for the utilization of glucose are sufficient to take care of the increased load from intravenous therapy.

If a patient is not extremely ill I usually resort to a high carbohydrate, low fat, maintenance protein diet. Patients are allowed to have six feedings a day from this diet. They are advised in the morning to take small doses of effervescent sodium phosphate, and in addition, if these patients are jaundiced, I give them about five to ten grains of potassium iodide three times a day. It has been my experience in cases of liver damage that iodides seem to have some beneficial effect on restoring liver function. In addition to the high carbohydrate diet one can, of course, resort to other methods of giving sugars. In cases of liver damage with jaundice, in which there is apparently no definite etiological factor and the gallbladder does not seem to play a dominant role, in spite of the negative serological findings for syphilis, one may be justified in giving mercury or bismuth hypodermically. Occasionally you may find that you are dealing with an occult luetic hepatitis. Some 50% of the patients who have luetic hepatitis at times may give negative serological findings. Clinical improvement has been noted in some of the patients following the administration of these drugs.

In cases of gallbladder disease in patients who have had a previously damaged liver, and the function of the liver has now returned to near normal, one may consider the justification for surgical intervention. However, in the presence of jaundice one should withhold surgery until it subsides to a near normal level and other physiological methods indicate evidence of an increased liver reserve. If we are to prevent the possibility of a so-called acute hepatic insufficiency developing with or without surgical intervention, and particularly with surgical intervention, you must bear in mind that the liver reserve should be increased in order to withstand the increasing load resulting from surgery in or about the gallbladder region.

It is my feeling that all patients with gallstones, unless they are poor surgical risks, should be treated surgically. I see no reason to treat calculus disease medically, because I am sure that there is more danger in allowing this condition to remain dormant in a patient than the risk of surgical intervention in a properly prepared patient. I need not call your attention to the possibility of the development of a suppura-

tive cholecystitis with its coexisting damage and increased morbidity and mortality, or to the fact that a toxic cirrhosis may develop from gallbladder disease; or that in a small percentage of cases carcinoma may be engrafted on a gallbladder with stones. These facts must be clearly borne in mind in evaluating a patient's condition and it may be that there is probably far less risk for a given patient to have the gallbladder removed than to allow complicating factors to arise as previously described.

In the noncalculus gallbladder, which shows radiological evidence of existing pathology and which does not respond to medical management, these patients should be cholecystectomized after they have been in the hospital for three or four days, during which time you have evaluated their clinical picture for a surgical risk. I cannot too strongly urge you to be conservative before surgical intervention to prevent the untoward complications which may result from too hasty intervention in improperly prepared patients. There seems to be a great deal of desire on the part of physicians to do surgery in patients who show definite evidence of jaundice, particularly if it is increasing.

My most difficult task is to keep surgeons out of this type of an abdomen. I see no urgency for surgery in a patient who is gradually becoming more jaundiced, especially if you are sure you are not dealing with an obstructive or mechanical type of jaundice. Many physicians are distinctly disturbed by an icterus index of 50 or 60, which is not an indication for surgery. If the duodenal contents or the stools contain bile I see no value from surgical intervention. All one does in surgery, in this particular type of case, is to produce an increasing liver damage, due to the trauma and disturbance of the protective mechanism in the partially walled-off lymphatics. It is much better judgment to treat these individuals medically by the methods previously outlined than to have a hasty surgical manipulation of an nonoperative field. Finally, I know of no condition in the abdomen which calls for more careful, sane, and meticulous judgment than the handling of a patient with a diseased liver and its associated jaundice. Conservatism should be the better part of one's valor.

104 S. Michigan Avenue.

DISCUSSION

Dr. Edgar M. Stevenson, Bloomington, Ill.: Jaundice or icterus is the term applied to the discoloration of the skin, conjunctivae and body fluids by bile pigment. It is encountered under varied circumstances and, like albuminuria, it is a symptom which may be caused by a variety of conditions. It is not a disease entity.

Dr. Portis' paper seems to me to be a constructive plea for careful diagnosis, a more complete understanding and conservative management of the patient with jaundice.

In order to evaluate the jaundice problem and offer an intelligent prognosis to the patient with jaundice, it should be emphasized that icterus may occur under the following circumstances:

1. When the bile pigment formed in the cells of the reticuloendothelial system passes normally through the parenchymal cells of the liver so as to reach the bile capillaries, but its excretion through the bile ducts is obstructed so that it is reabsorbed into the blood. This type of jaundice may well be termed the obstructive type in which there is bilirubinemia, bilirubinuria and cholemia, and the stools are clay or slate colored.

2. The hematogenous group which occur in cases of excessive blood destruction when more bile pigment is formed by the reticuloendothelial cells than can be taken care of by the polygonal cells; in such cases even though some pigment passes normally into the bile capillaries there is still some systemic increase in the blood and bile in which case one finds acholuria with bile in the stools and an associated anemia.

3. From injury to liver cells with suppression of liver function, the so-called toxic jaundice in which bile salts are not secreted.

The satisfactory management of any problem is dependent on accurate diagnosis and, as Dr. Portis has pointed out, the medical management of the patient with jaundice is further dependent on a complete and thoughtful understanding of the physiology of the organs involved. I believe we can all agree that all patients suffering from chronic obstructive jaundice and from icterus of the hemolytic type should be operated upon, as surgery offers the only hope of relief. Surgery should be postponed, however, until a complete clinical evaluation of the patient's risk is made.

The non-obstructive types and toxic types present the problem for medical management. The rationale of management which Dr. Portis has outlined is even better understood when one remembers that the liver, in addition to being a storehouse for glycogen and a manufacturing plant for the production of bile, has a detoxifying function which must be protected. The points which Dr. Portis has made in connection with the use and administration of glucose, the diet, the use of sodium phosphate and of iodides, are all well taken, and I can strongly recommend these for your use.

I join with Dr. Portis in an earnest plea for "more careful, sane and meticulous judgment in the handling of the patient with a diseased liver and its associated jaundice."

Dr. Robert Keeton, Chicago: I am very much inter-

ested in this subject and I believe Dr. Portis has done us a good turn in distinguishing between these two types of jaundice. So often we forget that when we have cholecystic disease with jaundice and temperature we are not dealing with obstructive jaundice but with organisms which are invading the liver, and with toxins which are being absorbed and causing changes throughout the liver. Those are the patients Dr. Portis has made a plea for—to save their lives by conservative management. I want to go still further because we see these patients with cirrhosis of the liver returning. I wonder how many times, when we see a patient of this kind, we realize our full responsibility. Is it not our responsibility to say to such a patient: "You got by this time. You may have trouble in the future but we do know that the chances of your developing a cirrhosis of the liver are greater than if we had not had jaundice." Once we get cirrhosis we are limited in our possibilities and I believe we should look upon this particular type of case as an individual with a potential cirrhosis of the liver and we should, therefore, decide whether we should advise him to have an interval operative procedure or not.

There is another point which Dr. Portis is not anxious to stress because everybody seems to adopt that viewpoint; that is, when you get obstruction of the hepatic duct. I think our trouble is that we do not know when we have obstruction. If there is no bile in the duodenum and your patient is running a temperature, you must realize that he has a damaging process in the liver and that means immediate operation. I have been struck with four or five cases of cirrhosis of the liver in children fourteen to sixteen years of age and when we go back over their histories we find some such transitory attack of inflammatory jaundice which has eventuated in cirrhosis.

Dr. Cecil Jack, Decatur: We think of jaundice as a yellowing of the skin, but that does not satisfy the patient. He wants to know why it itches and what to do to relieve it.

Dr. Sidney Portis, Chicago (in closing): Any time any one brings up the question of icterus or jaundice at a medical gathering it should provoke a brisk discussion, unless we all are agreed that the management outlined is the safe and sane method of management. I remember as a medical student how sloppily—and I use that term unreservedly—we were taught the treatment of these conditions; how we were told that surgery should be done at the outset because of the fact that in those days we had no conception at all of abnormal liver pathology. But in our present day method of teaching our medical students, we understand what the liver is trying to do at all times and we do not have to talk in an abstract fashion.

The evaluation of a surgical risk in jaundice is a difficult problem for both surgical and medical men, but how are you to tell, Dr. Keeton, that you are dealing with an obstructive hepatic jaundice in the early stages. I know of no method. Time is the best doctor. What harm can be brought about by watching these patients for five or seven days. If the icterus is increasing in spite of the things you are doing, then you are correct and can be certain that you are dealing with an obstructive hepatic jaundice, but if the icterus reaches a peak in its curve and does not rise higher than a safe level, you are not dealing with obstruction. That is the rule I use. If, in spite of adequate medical management, the icterus index is rising over a period of five to ten days, then I know there is an obstruction at the outlet of the common duct, but if this icterus index is stationary, I am willing to take my chances and treat that patient medically.

Another point is that too many of us are too eager to allow a patient who has had one attack of acute cholecystitis with subacute jaundice recover from that attack, and then continue to treat him medically when he is a good surgical risk. Many of you still use the nonsurgical drainage of the gallbladder, and yet I think that you are doing those patients more harm than good, because we know from our studies at the operating table and from our studies at necropsy that wherever we have a gallbladder disease there is also liver disease, and nonsurgical drainage does little for liver damage.

I do not feel, in the so-called functional states of gallbladder disease in which there is a normally functioning gallbladder and when the patient has symptoms of gallbadder disease, that the patient should be cholecystectomized. He is better off treated medically.

As to itching, I am sure that when you cure the hepatitis the pruritus subsides.

Question: I should like to ask the doctor if there is such a thing as extrahepatic jaundice. I have noticed in my practice that in certain seasons of the year I have five or six cases of icterus at one time, and I wondered if there is something in the seasonal curve of food or water that makes this somewhat like an epidemic.

Dr. Portis: There is such a thing as extrahepatic icterus, but by extrahepatic jaundice we mean most often hemolytic jaundice. True enough, we see epidemic forms of jaundice. I remember that I had five or six student nurses on my service with jaundice at one time. Also, you are all familiar with the clinical picture of Weil's disease. The so-called toxic and infectious form of jaundice is by far the more common.

DO YOU KNOW—

That during the last ten years children of Illinois under fifteen years of age have lost an aggregate of 6,500,000 days from schools because of scarlet fever, smallpox, diphtheria, whooping cough, measles and chickenpox? This amounts to a full week out of classrooms for every child.

That medical science, individual physicians and health authorities, have been advocating the widespread use of preventives of these diseases? That their recommendations have been for the public good and mean more to the individual children and their families than to the medical profession?

CANCER AND PRECANCEROUS CONDITION OF THE SKIN

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The incidence of cancer of the skin apparently is increasing. In those districts where cancer is a reportable disease statistics show that in 1921 2,610 persons died of cancer of the mouth, 2,433 from cancer of the skin. The same areas in 1934 reported 5,009 deaths from cancer of the mouth, and 3,315 from cancer of the skin, an increase of 3,281. MacKee believes this increase may be explained by more accurate diagnosis and more complete statistics, but probably it is due to the rising average age of the population.

In view of these facts the early recognition of cancer of the skin and the mucous membranes, and conditions that may develop into cancer become a matter of vital importance. A number of cutaneous conditions have been labeled precancerous. This term has been the subject of considerable discussion. There are some who feel that the term should be discarded, and others who believe, as I do, that the name should be given to those lesions in which there is a possibility that cancer may develop.

If we hope to eradicate cancer of the skin, it is necessary that we recognize early those conditions in which cancer may develop and take proper measures to remove them. For this reason we will first consider a few of the precancerous lesions of the skin although in a paper of this scope it will be impossible to describe all of them in detail.

Cutaneous cancer has been known to develop in scars, especially in scars of old burns, in cutaneous horns, farmers' or sailors' skin, and in keratoses, either senile, seborrhoeic, arsenical, or occupational. It has developed also in areas of kraurosis vulvae, in leukoplakia, in chronic roentgen dermatitis, and there have been reports of it occurring in lupus erythematosus, lupus vulgaris, in chronic ulcers, in xeroderma pigmentosum, and von Recklinghausen's disease.

1. *Senile keratoses* are generally seen in elderly people, in those of blonde or sandy complexion, those that freckle easily, and those whose occupation has necessitated a life outdoors and exposure to the active rays of the sun. They are more commonly seen in men than in women. Their location is generally the face and the backs of the hands. Senile degeneration of the skin may play a part in their development, but more probably exposure to the sun's rays in a skin of low toleration is a better explanation.

These lesions are pea-sized or larger, dirty gray or brown in color, dry, brittle, and firmly adherent to the skin. They are curetted off with difficulty and when forcibly removed the operation is painful. Unless they are completely destroyed they tend to recur in situ. If allowed to remain they often degenerate into carcinoma of the skin, generally of the squamous cell type. On the back of the hand and on the mucous membrane of the lip they invariably become squamous cell carcinomata.

Treatment. As soon as such lesions are recognized, they should be destroyed. This can be done with electrodesiccation, with the cautery, or they may be excised. Superficial lesions may be frozen with carbon dioxide snow, others may be removed by the application and utilization of the beta and gamma rays of a radium plaque.

2. *Seborrheic Keratoses.* These are commonly known as seborrheic warts. They are relatively common on the skin after the age of fifty. For the most part they are harmless, though occasionally there is a possibility of carcinoma developing. Such a carcinoma is generally of the basal cell type. The commonest locations for such lesions are the sides of the face, about the hair line of the temporal regions, the chest and the back. Occasionally they occur on the hands. They range in size from a split pea to a good sized nut, are dark brown, dark gray, or grayish black in color, smooth, fatty and greasy, and when curetted off the skin, crumble, leaving a raw, slightly verrucous base. Their cause is unknown, but occurring in seborrheic areas, they are probably seborrheic in origin.

Treatment. Many of these lesions can be left alone safely. If they are annoying to women, because of their appearance, they can be curetted off and the bases cauterized with carbon dioxide snow, the electric cautery, or the entire lesion dessicated.

3. *Arsenical Keratoses.* Arsenic should never be given over a long period of time without frequent and prolonged rest periods. Very often the prolonged ingestion of arsenic in the shape

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of Fowler's or Donovan's solution has produced numerous keratoses of the skin. This type of lesion especially affects the palms and soles. The skin is dry and beset with numerous, small punctate keratoses, pinhead to pea in size, some superficial but many deep seated. Very often dangerous squamous cell carcinomata develop from such lesions.

Treatment. Because of the large number of lesions generally present it is difficult to eradicate them. Large lesions and those that appear to be degenerating should be removed as soon as possible. This can be done best by surgical means. The skin should be kept soft with frequent greasing with lanolin or cocoa butter.

4. *Leukoplakia or Leukokeratosis Buccalis.* This is a very common precancerous condition and at the beginning occasions few, if any, subjective symptoms. Sometimes a feeling of stiffness in the mouth or irritation from hot or spicy foods first calls attention to its presence. On examining the mouth the lesions are seen on the buccal mucosa in a line opposing the junction of the upper and lower teeth. One also may see it on the dorsum and sides of the tongue and even on the gums. It must not be confused with lesions of lichen planus or lupus erythematosus. In most cases there are evidences of these diseases on the skin. The lesions themselves appear as white spots, streaks or plaques of irregular size and shape; often their surface is rough and verrucous, but in some cases it is smooth and velvety. Their color is a whitish gray, often likened to a mucous membrane that has been penciled with silver nitrate.

The more pronounced lesions often feel stiff and rough to the palpating finger, are generally covered with a tough adherent pellicle, removable with difficulty, and unless fissures have developed occasion little pain. These lesions develop slowly and may cause little inconvenience for years, but when fissures develop they are deep ones extending into the derma and causing a great deal of distress. Later peeling and exfoliation of the surface occurs and carcinoma develops.

The general belief among competent dermatologists is that many factors enter into the production of leukoplakia. It may be caused by syphilis, prolonged local irritation, the use of tobacco, faulty occlusion, ill-fitting dentures, pyorrhea, jagged teeth, and poor mouth hygiene. McCarthy believes the use of tobacco is the most important factor in the production of leukoplakia, but faulty occlusion and consequent bruising of the mucosa is another important factor.

Treatment. The treatment of leukoplakia depends to a considerable extent on the type of condition that is present. Generally, treatment is unsatisfactory. First of all, tobacco, highly seasoned foods, and spicy foods should be interdicted. Ill-fitting dentures should be discarded, faulty occlusion corrected, jagged teeth smoothed down, and care and attention given to oral hygiene. If the patches are smooth, not fissured, nor showing any signs of irritation, they should be left alone but carefully inspected every three to six months. The vast majority of leukoplakia conditions require no treatment. If fissures, ulcerations or vegetations appear, then immediate steps should be taken to destroy the patch. This is done best with electro surgery though on small areas the cautery works nicely. If extensive patches that show signs of becoming malignant are present, they should be excised surgically. It is believed that the use of radium and x-rays has no place in the treatment of this condition, and the use locally of irritating or caustic remedies is followed often by the development of carcinoma.

In every case of leukoplakia a Wassermann test should be made and if positive, anti-syphilitic therapy should be instituted. In most cases treatment will have little effect on the leukoplakia but it is indicated nevertheless.

5. *Kraurosis Vulvae.* This condition generally is seen in women of advanced years and occasionally in younger individuals in whom the menopause has been prematurely induced. Darier defines kraurosis vulvae as "a sclerosing, progressive atrophy of the mucosa and cutaneous integument of the vulva, leading to stenosis of the vaginal orifice, the disappearance of the labia minora, the frenulum and clitoris and flattening of the labia majora. The mucosa of the parts involved is nearly always smooth, shining and dry. The color is white, waxy, red or spotted and complication with leukoplakia is frequent." In such cases, cancer is always to be looked for as a future development.

If one will look for these symptoms he will not have any difficulty in differentiating kraurosis from simple vulvar leukoplakia or from the whitish lichenification of the vulva which

may be the cause or end result of pruritus vulvae.

Kraurosis vulvae is an atrophic process which may lead possibly to malignant change. Leukoplakia is a hypertrophic process, often associated with kraurosis vulvae and frequently is followed by carcinoma.

Treatment. MacKee believes that it is best to treat kraurosis vulvae conservatively but inspection of the involved parts should be made at least every six months. For the relief of itching, antipruritic lotions and ointments should be prescribed. Roentgen ray treatment is often of value for the relief of obstinate pruritus but should be used with a great deal of caution on an already atrophic skin and mucosa.

Areas of leukoplakia, ulcers and erosions had best be destroyed or excised.

When large areas of leukoplakia appear in an extensive well-advanced case of kraurosis, a partial or complete vulvectomy should be performed, followed by plastic repair.

6. *Chronic radiodermatitis* or so-called x-ray skin may show various types of lesions, the sequelae of over treatment. While the percentage of malignant change may not be high, cancer develops often enough to make this kind of tissue dangerous. When degeneration does occur it is generally of the squamous cell type. The lesions in x-ray skin that demand energetic and immediate treatment are ulcers and keratoses. Keratoses should be destroyed either with electrodessication or excised completely. Ulcers should be removed with wide excisions, including some of the normal tissue, to be certain that no diseased tissue has been left. The excised area should then be covered with a skin graft. For areas that show only atrophy and telangiectasia, careful inspection should be made every six months to see that no keratoses or ulcerations have developed.

Most dermatologists and dermatopathologists divide carcinoma of the skin into two main groups, basal cell epithelioma and squamous or prickle cell epithelioma. MacKee, in his latest work, classifies skin malignancies in the following sub-groups:

1. Basal cell epithelioma
2. Basal-squamous cell epithelioma
3. Squamous cell epithelioma
4. Paget's disease
5. Bowen's disease
6. Malignant melanomas

Basal cell epithelioma is a slowly progressing lesion, generally an ulcer with everted pearly borders and usually covered with a brown crust. It is more common in males than in females, and generally occurs after forty. The nose, temporal region, inner canthus of the eye, ear, and dorsal aspects of the hands are common and favorite locations. Lesions may be single or multiple, mucous membranes are rarely attacked, and metastases do not occur.

This type of cancer often begins in an area of keratosis which may have been present for some time. An erythematous area develops about it, the crust covering it is denuded, bringing into view a superficial ulcer with a granulating floor and a rolled-out everted pearly border in which can be seen small epithelial pearls with dilated vessels coursing over them. In other instances its development may take on the appearance of a smooth, waxy nodule, yellowish white in color, over which course small dilated vessels.

Treatment. Basal cell epitheliomas may be treated successfully with radiotherapy, either with the roentgen rays or with radium. They may be destroyed with electrodessication, by cauterization, or they may be excised surgically. When basal cell epitheliomas recur, a biopsy should be performed to determine whether or not the lesion is a basal-squamous cell cancer or a squamous cell cancer.

The selection of a method of treatment depends a great deal on the size and location of the lesion. Radiotherapy probably offers the best method of treatment in the average case. It is valuable especially in those cases located about the canthi of the eye or the eyelids. It is contraindicated, however, in those cases in which cartilage or bone are involved.

The term *basal squamous cell epithelioma* is used to designate those transitional forms that occur between basal cell and squamous cell epithelioma. In a series of 119 cases of epithelioma of the skin, Montgomery found that this type of transitional epithelioma occurred in 12.6 per cent. of the cases. They represent a metamorphosis of basal cell to squamous cell epithelioma and are not degenerative forms of squamous cell lesions.

In 60% of such cases, transitional epitheliomas are indistinguishable clinically from basal cell lesions. The differential diagnosis can be made only by microscopic examination though

one always should suspect this type of lesion when a basal cell lesion refuses to respond to treatment or recurs readily after having been eradicated.

Basal squamous cell lesions may metastasize as such occasionally, and the metastasis remains for years or it may metastasize as a squamous cell epithelioma.

Treatment. These tumors are resistant to roentgen ray and radium treatment and radiotherapy should be used only as a last resort. Surgical removal with wide excision is the treatment of choice for the lesions are prone to recur.

A squamous cell epithelioma is a tumor arising from the basal cell layer of the epidermis and characterized microscopically by the presence of adult squamous cells and cornification or pearl formation. This type of lesion primarily affects the mucous membranes and mucocutaneous junctions, especially the lower lip, the nose, eyelids, dorsum of the hands, penis and vulva. It is seen most often in older people and attacks men more frequently than women. It begins often in a precancerous keratosis on the lip or hand and generally grows very rapidly, producing considerable destruction in a relatively short time. In aged persons its growth may be slow due to a low grade of malignancy or due to its invasion of sclerotic tissue. Extending rapidly it attacks connective tissue, cartilage and bone, metastasizes rapidly first into regional lymph nodes, later into internal organs.

Usually the lesion begins as a nodule or well-defined area of infiltration. Ulceration may develop rapidly or be delayed considerably. It grows larger rapidly and when the crust is removed, a well-defined ulcer may be discovered. Its edges are hard and usually everted but the pearls seen in basal epithelioma lesions are absent. The floor of the ulcer may be papillomatous or studded with filaments between which is a purulent exudate.

Broders has classified squamous cell epithelioma into four groups, depending upon the amount of differentiation of the individual cell, mitosis, and pearl formation. He found that squamous cell epithelioma of grade one, recurred following excision in only ten per cent. of the cases, whereas successful results were obtained in only ten per cent. of the cases in which the lesions were of grade four.

Treatment. Those cases that are detected early offer the best prognosis but the choice of treatment depends to a great extent upon the location of the lesion, the age of the patient and the presence or absence of enlargement of the adjacent lymph glands. Early lesions have been treated with the roentgen ray and radium, but on the whole either electro surgery or excision offers the best means of satisfactorily eradicating the growth.

Melanoma. This type of neoplasm is probably the most malignant of all cutaneous tumors. It arises from pigment forming tissues and was formerly thought to be a sarcoma. It is now considered a carcinoma. When it arises from a naevus it is called nevocarcinoma, when it develops from an acquired pigmented lesion it is known as a melanocarcinoma. It may be seen anywhere on the body but a frequent site is the extremities.

The sudden enlargement of a previously quiescent slate blue mole is the first symptom noted. This is generally the result of repeated trauma or irritation. The mole enlarges, becomes darker in color and ulcerates. The neighboring lymphatic glands are involved shortly afterwards and if the tumor is one of the very malignant type, generalized metastases make their appearance within a few months. This generalization manifests itself with the rapid development of pigmented tumors in the skin of the entire body as well as in the viscera. The degree of malignancy may vary, however. Occasionally we see these lesions develop and remain localized for months or years.

Treatment. There is considerable difference of opinion as to the treatment of melanoma. All dermatologists agree that the slate blue mole should be left alone. If it is in a location where it is subject to trauma and irritation then treatment is indicated. Early cases have been cured with radium and surgery. MacKee believes that when the lesion is local, surgery is best. The excision should be wide and deep, extending down to the muscle. X-rays or radium then may be used intensively on the area of excision. When the lesion is located on the toes or fingers, amputation rather than excision is indicated. After metastases have occurred no treatment is of avail.

In addition to the previously described types of carcinoma of the skin, we must consider

Paget's Disease, Bowen's Disease, and multiple superficial benign epitheliomatosis.

Paget's Disease. This is an uncommon cutaneous condition that occurs usually on the breast in women, though occasionally it is seen in men. Both breasts may be involved but more commonly only one is affected. It consists of the development of a rather localized patch of eczematoid dermatitis surrounding the nipple. At first the patch is merely inflamed and scaling. Later the area becomes more irritated and oozing from a granulating surface is noted. The patch is disc-like, infiltrated and can be picked up like a button. The nipple may be retracted or entirely normal in appearance. The area is generally the seat of intense pruritus and pain.

Unlike other patches of eczema it resists all treatment. The censensus of present day opinion is the Paget's disease is a cancer from the beginning, an intra-epidermal and intra-ductal carcinoma.

Extramammary cases of Paget's disease have been reported. The disease has been sen on the scrotum, penis, buttocks, vulva, the perineum, the pubic region, about the umbilicus and in the axilla.

Treatment. In the breast cases, radical surgery with removal of the axillary glands is indicated at once. In the extramammary cases, radium and x-ray have been used with considerable success.

Bowen's Disease. This cutaneous new growth was originally described by Bowen in 1912. Since that time a number of similar cases have been reported. For a considerable time there was controversy as to whether Bowen's disease was a precancerous lesion or a carcinoma. MacKee believes that the affection represents a malignant dyskeratosis and an intra-epidermal carcinoma, and that when it invades the derma it may assume any one of three types, namely basal cell epithelioma, baso-squamous cell epithelioma, or spuamous cell epithelioma.

Its cause is unknown. It is common on the trunk and extremities and occurs infrequently on mucous membranes. The disease first manifests itself as a dark or pale red papule. It is covered with a bulky crust under which the surface may be eroded, papillomatous or verrucous. This papule spreads peripherally, very slowly, becoming more infiltrated and nodular, and new papules, ultimately becoming nodular, make their appearance in the immediate neighborhood. In its typical form the disease is seen as a well-defined patch, sometimes with arciform configuration made up of these nodular, crust covered lesions.

The condition is essentially a chronic one. Cases have been known to exist for forty years without causing trouble, others have developed into squamous cell carcinomata.

Treatment. The best treatment is destruction with electro surgery or excision of the patch. Some cases have been eradicated with radium and roentgenotherapy.

Multiple Benign Epitheliomatosis. In 1923 Little described a type of epithelioma which he termed erythematoid benign epithelioma. We prefer the above title. The lesions are generally multiple, are seen widely scattered over the trunk and oftentimes associated with other dermatoses, such as psoriasis, eczema, or seborrheic keratoses. The lesions are well defined, superficial flat patches varying in size from a dime to a silver dollar. They may be dull or bright red in color, scaling or slightly atrophic. They have one definite characteristic, an exceedingly fine, rolled-out thread-like edge which distinguishes them from psoriasis, eczema, lupus erythematosus and syphilis. They are likely to remain localized for years without causing trouble, but on the other hand they may develop into rather deep ulcers.

Treatment: Surgical excision is probably the best method of treatment.

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IF WAR SHOULD COME

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The true patriot and citizen desires peace, not only for his own people, but for those throughout the world, for he well knows that when the balance of peace or peaceful pursuits are disturbed on a major scale, anywhere in the world, his own people stand in danger of becoming involved. However, this patriot and well-informed citizen, in spite of his possible wishes to the contrary, realizes, from his knowledge of present day happenings the world over, and the mental and spiritual limitations of mankind under stress, that the best guaranty for the peace and safety of the United States is to be prepared and be strong enough at all times to repel attack.

The immortal Washington is reported to have stated: "To be prepared for war is one of the most effectual means of preserving peace." He believed that the citizen in his everyday activities, consciously or unconsciously, played a most important part in our national defense system. This was evidenced by his admonition to the Congress of the United Colonies that we, as a nation, should avoid all foreign entanglements and alliances and develop, at least in time of stress and trouble among other nations, a policy of national isolation.

Sound military knowledge on the part of the civil population, far from being militaristic, is a nation's greatest safeguard. This military knowledge and limited training on the part of the civilian, coupled with adequate means to defend this nation, has always been, and doubtless will so remain, the outstanding need to maintain peace with the rest of the world.

Thus, it is highly essential that our voters, our legislators and the graduates of our institutions of learning should understand what is needed to preserve peace and to prevent war.

The traditional military policy of the United States has been and is, that the military establishment in time of peace shall be a small Regular Army, and that the ultimate war force of the nation shall be a great army of citizen soldiery. Hence, our military problem is to devise means and methods to assure properly trained and equipped armies of citizen soldiery to meet the needs of modern war. Therefore, it logically follows that the citizen should thoroughly understand that if we are to have an adequate national defense system, the larger the number of our citizens familiar with and trained in things pertaining to the military, the less will be the need for a large Regular Army. This is our current national defense policy. The Regular Army acts as a school, or, if you please, a great laboratory, for the development of national defense plans; for the development and improvement of new weapons and equipment, and the development of their correct tactical employment on the battlefield.

In 1916 the Congress of the United States enacted the National Defense Act. This Act was later amended as of 1920 and has since been the national defense policy of the United States. This act reorganized the National Guard and provided for the Officers' Reserve Corps, the Reserve Officers' Training Corps, the Citizens' Military Training Camps, and, in addition to the purely military phases of our national defense, set up, under The Assistant Secretary of War, a system for the procurement of supplies for our armies in time of war. This system is known as procurement planning. It is vital to our national safety.

Under our present plan "If War Should Come," the active Regular Army and National Guard organizations will act as the first line defense force, to hold until required additional troops can be mobilized and trained.

In passing, it may be of special interest to you gentlemen of the medical world to know that we shall require approximately 8,000 commissioned and 30,000 enlisted Medical Department personnel for each field army mobilized. Of this commissioned personnel approximately 4,000 must be physicians. It may be of further interest to you to know that a working majority, together with their junior understudies, have been selected and assigned to their war-time activities, and further that these assignments, as far as practicable, have been based upon their demonstrated qualifications and activities in civil life.

Science and Its Application to War: Today throughout the world, science and its commercial application are developing at a rate never before recorded in history. Whereas, in the past, man

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largely has devoted his time, thought and energy to the matter of improving his original implements, designed to protect his life, to assist him to obtain a livelihood, and for his use in war, our present-day civilization has stepped off into that more or less intangible and inexhaustible world of science, and is discovering new implements and developing new applications of both the new and the old to the needs of modern civilization.

This situation, it is believed, may bring about new developments in the methods of waging war, and new and more complicated situations in the field of international affairs. Who can predict with certainty the ultima of applied scientific knowledge and discovery in the matter of war "If War Should Come?"

In order that we may the better consider this phase, may I respectfully invite your attention to a limited number of examples in this vast field of modern scientific development? Possibly, as obvious an example as any is the airplane. Consider its metamorphosis within the short span of the past 10 or 15 years, or better still, the almost unbelievable advance during the recent past in the medical profession. So we may continue through the field of pure and applied science, the horizon of which is ever, with accelerated velocity, receding to a distance scarcely comprehensible to many of mankind.

History appears to indicate that the reality of actual war has always developed that weapon best fitted to bring about the desired ends.

Hence, it would appear that "If War Should Come," it is folly to think or argue that present or future wars will or can be fought with twentieth century scientifically developed equipment and weapons, along eighteenth or nineteenth century lines.

The airplane is with us. It has extended the maximum range of our weapons of war from up to a few thousand of yards to many hundreds of miles. If this tremendously increased range can be effectively employed, does it appear logical, when we consider the vast amount of money being expended the world over in its development and expansion, that it will be discarded and not employed to its maximum effectiveness when war comes?

During the war 1914-1918 a new scientifically developed weapon was effectively employed for the first time in modern warfare. This weapon was chemicals, commonly described as "gas." The results obtained from the use of this weapon were such as to cause much worry on the part of all high commands and the development of an unfavorable propaganda which still lives in a most virulent form.

Whether this propaganda was and is based upon fact and has been well considered is believed to be an open question. A few years ago there was compiled, after much study and research, what is believed to be an authentic facts record of the wartime casualties for Germany, Great Britain and the United States. These facts were compiled from what were believed to be authentic records of the several nations, and in the case of the United States the facts were originally compiled from battlefield records.

These U. S. facts show that approximately one casualty out of every four who entered the American hospital system, entered on account of the effects of this scientifically developed weapon, "gas," and that only two per cent of the gas casualties died, while, on the other hand, 24 per cent of the casualties from all other causes died. In addition, it would appear that you of the medical world, in particular, might well give thought to those casualties from gun shot wounds, who did not die, but who live to suffer from their wounds and are partially or totally blind. In this connection it is interesting to note that the facts cited for the United States correspond in all essentials to similar facts in the case of Great Britain and Germany.

Further, your own professionals the world over, in official record, have repeatedly stated that gas casualties who live beyond the period of hospitalization due to the effects of gas, suffer no permanent ill after-effects, and it is authentically reported that of those who entered the American Army hospitals, 1917-1918, due to the effects of gas, only 29 were blinded in one eye and only four in both eyes.

The Central Powers began using vesicant chemical agents, better known as "the mustard gas type agent," in July 1917. This chemical agent brought into play an entirely new phase in warfare weapons. This new phase was the element of time, varying from a few hours to several days, over which this chemical was effective in bringing about casualties. This prolonged effective casualty producing period greatly increased the number of casualties. This mustard

gas type of chemical agent, under normal conditions, seldom produces death, but, due to the effective time element referred to above, it is capable of producing large numbers of casualties which will require hospitalization and medical care.

Use of Chemicals Against Civilians: In addition to the possible employment of this chemical weapon on the battlefield by the scientifically minded industrial nations, it would appear reasonable to assume that if this weapon is effective against civil populations, it probably will be so used and if so, will be used to that degree which conditions appear to warrant. This thought appears to be borne out by the extensive precautions which are being taken in practically every large city of Europe and Asia. These precautions include preparations to equip a majority of the nonmilitary populations with gas masks; the building of elaborate gas-proof shelters; the development of extensive first-aid organizations, and the preparation of adequate gas defense instructions. In addition to all of the above, elaborate plans have been prepared to organize extensive anti-aircraft defense means, methods and measures, including long-distance warning services, vast combat air fleets and complete local anti-aircraft gun defenses.

The Purpose of Weapons in War: The ultimate purpose of all weapons used in war is to affect some vital portion of the human body to such a degree that it will be incapacitated for varying lengths of time. The weapons of the past, of necessity, have been designed and used in such manner as to shatter or destroy the human body, in order to reach this vital spot. In order to minimize this danger combatants in the combat zone have been, through the ages, progressively distributed farther and farther apart. And, in addition, present day study and development indicates that these sparsely scattered combatants of the future will, to a degree at least, be encased in mechanized, armored elements and their collective advance covered during daylight by the use of artificial fog or smoke.

Hence, it does appear that some thought might well be given to the questions: Can the weapons of the past continue to produce such results as will warrant their exclusive, continued use in the future, and whether or not we are approaching the time, if we have not already arrived thereat, when a new, all-pervading type of weapon will be required to bring about the desired results?

Is it possible that our civilization is about to develop a new idea in the matter of weapons of war which will be comparable to the adoption of gunpowder as a weapon of war in the fourteenth and fifteenth centuries? It would appear that this is a thought which you and the scientific world, as a whole, might well give the most serious consideration. In the light of our rapidly developing scientific attainments in all other fields, can we reasonably expect that we shall be compelled to continue to tear apart the human body by the individual fragment of a bursting shell or a bullet, in order to force the will of the victor upon the vanquished? On the other hand, can we not reasonably expect our scientific age to produce a new weapon which will incapacitate, without leaving the incapacitated dead upon the battlefield, or a human wreck for the rest of his life?

Is it possible that this result may be brought about through biological action or the use of chemicals? It would appear that such use is well within the realm of possibility and practicability and that it is a present-day scientific problem, crying out for solution, to men and women of the scientific world, and to you of the medical world, to prepare your part, if and when such a possibility becomes a reality and is used against our people.

I am entirely opposed to war in any form whatsoever. However, I am a realist, and believe we are in the midst of ample evidence that war will continue as an international means of settling differences between nations for at least an appreciable period of time in the future, and that it is folly to believe wars between major industrial nations, in this scientific age, can or will be fought with twentieth century equipment and weapons, by methods and along the lines which were employed during the eighteenth and nineteenth centuries.

The facts set forth above appear to indicate beyond any reasonable doubt, that the use of chemicals in war has not caused a greater number of deaths, either on the battlefield or in the hospitals, or more intense suffering than the fragments of a high explosive shell, a machine gun or a rifle bullet.

The results obtained by the use of this weapon

on the battlefields of Europe in the war 1914-1918, and in more recent wars, indicate that the use of chemicals as a weapon of war is an effective weapon, and may materially assist in bringing about the desired result. Hence, it would appear reasonable to assume that its use may be expected in the future.

In closing, may I suggest that the use of science in war warrants the most serious consideration of the scientific and professional men and women of our nation. I sincerely hope and believe that the world of science will develop a weapon of war which will be more humane than those weapons employed in the past, and which will bring about the desired results with a minimum of suffering, death and aftermath heartaches and economic losses.

THE FIELD OF ACTIVITY FOR THE WOMAN'S AUXILIARY

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Madam President, members of the Auxiliary, and fellow guests:

I wish first to express my appreciation of the courtesy you have done me in inviting me to be your guest speaker today. Mrs. Henkel has just commented on the fact that I ate no lunch. In order to avoid the aspersion cast upon the Louisville minister under somewhat similar circumstances, I wish to explain that as a rule I eat no lunch, and that, consequently, I was merely conforming to my usual habits. This particular minister had accepted an invitation to deliver the Sunday evening sermon in one of the towns out in the State. He was met at the train and taken to the home of one of the members of the congregation, where a rather nice meal had been provided by the lady of the house. She noted that the minister ate little or nothing, and being somewhat chagrined she apologized to him for not having food more to his liking. He assured her that the meal was most appetizing but that from former experience he had learned that a heavy meal interfered with his flow of thought, and as he particularly desired to make a favorable impression upon the congregation he had intentionally refrained from eating. The housewife did not go to the evening service, the husband accompanying the visiting minister. At the conclusion of the service the minister was placed upon the train for Louisville and the husband returned to his home. Upon his entrance his wife said, "John, what did you think of the sermon?" "Well," he said, "Mary, he could have et." If my remarks fail to meet your expectations, I have willingly destroyed any possible alibi.

I early became interested in the Woman's Auxiliary, since Mrs. Abell was one of its early National Officers. I have watched with a great deal of admiration its development, not only in its membership, but in its activities. During the early years it fulfilled duties that were largely social in character, bringing together doctors, their wives and families; and in so doing it served a most useful function, particularly in the smaller communities. As the years have gone on the Auxiliaries in the various parts of the country have taken on other functions, many of which are extremely worth while. In Kentucky the Woman's Auxiliary has erected a granite monument to Jane Todd Crawford, upon whom Dr. McDowell operated in 1809, for the first time in the world removing an ovarian tumor. As a patient she had confidence and courage to undergo an operation that was known to be experimental and thus aided in an exploit, out of which has come the wonderful achievemens in abdominal surgery of today. The shaft stands near the McDowell monument in McDowell Square in Danville, Kentucky. The Kentucky Auxiliary has also established a Doctor's Shop, in the replica of Ft. Harrod, the first Fort established in the State of Kentucky in 1774. The Auxiliary has collected mementoes of this early period in the shape of old instruments, old books, saddle bags, and historical data of the early practitioner, filing same in the Doctor's Shop and making it a place of great interest.

I note today the Benevolence Fund project of your Auxiliary and think it a particularly fine, commendable undertaking. Another activity which I have observed is largely a cultural one, and yet one quite worth while, in that literary groups have been formed in some of the Auxiliaries which devote a certain time each month to the reading and review of books written by Doctors or written about doctors. Such books

Address delivered before the Women's Auxiliary to the Illinois State Medical Society, at its annual meeting held in Springfield, on May 18, 1938.

as "The Citadel," "Madam Curie," "The Bonnie Briar Bush," "Arrowsmith," "Devils, Drugs and Doctors," form interesting and informative reading. This afternoon I wish to suggest to you another activity, one that has been taken up in Kentucky and is being taken up in other States, namely, the organization of study groups to be concerned with the dissemination of knowledge concerning the social and economic movements that are destined to have some effect upon the practice of medicine. One sees much propaganda in the lay Press, in periodicals, and in magazines about the socialization of medicine. It can well be one of your duties to bring to the lay people, with whom you come in contact, the answer of the profession to the misleading statements which such propaganda contains. As the wives of doctors you are in a position to provide this information to your friends, clubs, Parent-Teacher Associations, Cancer Groups, and various welfare bodies with which you are affiliated. As the term is commonly used the socialization of medicine refers to any form of medical advice, diagnosis and treatment provided, conducted, controlled or subsidized by the Federal or any State Government. By evolutionary consent, some such practice is now and has for years been provided, being accepted as conforming to good policy in caring for the health of the people. These are the provisions of medical service for the armed forces of the U. S., the communal medical care of indigents by towns and cities, such for instance as that furnished in City and County Hospitals, the institutional care of the mentally ill by states, the sanatorium management for the tuberculous. Workmen's Compensation now provided by statute and state supervised to varying degrees and the various activities of the United States Public Health Service.

In considering some of the proposals for a wider distribution of medical service, it is well to keep in our own minds and the minds of the public that every change for the better that has accrued in medical practice has been initiated in and made effective by the medical profession without compulsion, political, governmental or otherwise. The progress that has been made in the medical care of the people of the United States in the past fifty years constitutes a remarkable social phenomenon. The death rate has been reduced fifty per cent. and the age at death has been increased one hundred per cent. Today under our system of medical care, we have the lowest rates for death, for infant mortality, and for most of the infectious diseases that prevail anywhere in the world. Such achievements of the profession should give any one pause who attempts to take control of the practice of medicine and public health from it. Our system of medical care is a logical evolution of personal medical practice to meet every need as it has arisen. The State controlled medical plans in other countries have been held up as an example to this country. As yet there is no evidence to afford belief that any one of these plans would afford better medical service than this country now enjoys. A careful examination of these systems reveals the following defects:

1. There is no decrease in the cost of medical care. The system adds a staggering administration cost.
2. Public health and preventive medicine are not assisted or advanced.
3. Morbidity and mortality are not reduced.
4. The problem of so-called catastrophic diseases is not solved.
5. Over-medication is encouraged.
6. The burden of cost is distributed over the low income class which is least able to bear it.
7. Medical care for the indigent is omitted.
8. Graduate education is not encouraged and is usually omitted.
9. The hospital load is increased and hospitals are encouraged to practice medicine.
10. Attention and financing are concentrated on the less essential health and medical measures.
11. Diagnosis and treatment are mechanical and superficial.
12. Medical service becomes a political issue.
13. The control of medical service is placed in the hands of unqualified non-medical individuals and organizations.

The principles and proposals enacted from the studies of the American Foundation Studies in Government and signed by 430 Physicians have created an endless discussion in the lay Press and in the public at large.

The medical profession has not discharged its entire obligation to society by healing the sick and preventing disease. Its broader obligation lies in a concerted determination and effort to preserve that form of medical practice which best

conforms to good public policy and which will perpetuate the free, independent, scientific, and ethical institution of medicine. It must vigorously resist all efforts that are likely to provide sick people with the mere dregs of a medical service or that are destined to reduce medicine to the serfdom of science. It must ask and receive satisfactory answers to the following questions upon any proposed change:

1. Would it provide better qualified doctors than are now available?
2. Would it make good medical care more available to the indigent, the unemployed and the low income group?
3. Would it enable physicians to devote more time to the care of the individual patients, especially to the seriously ill patients?
4. Would it provide more time and more inducements to physicians to keep up-to-date in their professional work by post-graduate study and clinical work?
5. Would it eventually reduce the average duration of illness in the United States?
6. Would it maintain or improve the present standards of preventive medicine?
7. Would it preserve the direct personal confidential relationship between doctor and patient?
8. Would it continue to attract the highest type of men and women into medicine as a life-work?
9. Would it reduce the national cost of medical service?

Now that the economic phase of medical practice is demanding more consideration, ethical relations must not be forgotten or removed from the central position they have always held. On the contrary, economic relations and plans, just as much as professional services and conduct, must be tested by the principles of medical ethics. Medical ethics are not outgrown or antiquated; they must continue to be vital, elevating, dominating and enduring by continuous respect and adherence, since without them medicine ceases to be a profession. The difficulties of supplying needed medical care differ almost as widely as do the states constituting this vast nation. Our population is not homogeneous: the labor element recruited from various European countries congregated in the cities of the north and east differ materially from the negro of the south and from the labor population of our southwestern states. The geographical distribution of population and of hospital and medical facilities varies from the densely inhabited northeast to the sparsely settled south and west; Montana with an area of 400,000 square miles has a population less than that of metropolitan Louisville; Jackson County, Kentucky, has a population of 35,000 with but three graduate physicians; Owsley County has a population of 10,000 with one graduate physician and derives but $11,000 from taxable sources, less than the amount required for the maintenance of its local governmental agencies. The economic level in the various counties and states of the nation alternates from pauperism to opulence. To formulate a program to meet the actual needs of the indigent and partially indigent in relationship to medical care is no simple task. If the social scientists could supply these groups with food, fuel, shelter and clothing many of their medical problems would thereby be solved. On December 20 last, in response to a request from the American Public Health Association, a conference was held in Chicago in which the Executive Committee of the Board of Trustees of the American Medical Association, the president and an accredited associate from the American Public Health Association and a representative of the United States Public Health Service participated. As a result of their deliberations, resolutions were adopted outlining a plan for the study and diagnosis of the needs for medical care in every county in the United States.

These resolutions have now been confirmed by the three organizations concerned and provide for the cooperation of county medical societies, state and local health agencies, hospital authorities, the dental, nursing and correlated professions, welfare agencies and community chests in determining for each county the prevailing need for medical and preventive medical service where such may be insufficient or unavailable. The undertaking proposed is an attempt to apply on a nation-wide scale the best features of the numerous plans already in effect, utilizing in each county to the fullest extent the resources there available, leaving open the question of outside aid where necessary and where possible of procurement. Thereby, it becomes possible for organized medicine to act specifically as a clearing house in the initiation, development and

functioning of what may well evolve into a comprehensive system of medical care for all the people according to the American plan of medical practice.

THE MANAGEMENT OF CARCINOMA PATIENTS BY THE GENERAL PRACTITIONER

C. O. Heimdal, M. D.,
AURORA, ILL.

Since the dawn of history cancer has been known and recognized as a serious medical problem. For centuries it was recognized as a fatal disease from the time of its appearance in the patient's body. Cures were almost unheard of and were deemed practically impossible. A great mystery surrounded the disease and many fallacies came to be believed. People did not seek medical help until driven by pain and discomfort, so physicians seldom saw the disease in early stages when they were able to offer hope of cure.

Gradually, however, earlier stages of the disease were encountered and some palliative treatment was found effective. A study of the problem was taken up by workers in the related sciences of chemistry, biology and physics, and information began to appear from these quarters. Physicians learned from their clinical records that the earlier the patient was treated after the appearance of symptoms, the longer he lived. Three-year cures were reported in increasing number, and then five-year cures. The American College of Surgeons has reported a list of more than 25,000 cancer patients who have remained free from cancer for five years or more since treatment.

Cancer has been on the increase for the past ten years. It is estimated that 150,000 persons in the United States died of cancer during 1936. From this total of 150,000, about 82,000 were women and almost half of these women died from cancer of the reproductive organs. One of the causes of this appalling increase in deaths can be directly attributed to delay in seeking medical treatment until months after rather definite symptoms have developed. Cancer of the various pelvic organs are of many different types. Some grow very slowly, some very rapidly. Unfortunately, some of the most malignant lesions can be present for several weeks without producing notable symptoms. It is evident, therefore, that we physicians continue to emphasize the importance of the early recognition of symptoms produced by these malignant growths and value of early treatment.

At the present time there are several organizations in the United States whose sole function is the study of some phase of the cancer subject. With these organizations bringing knowledge of cancer symptoms to the general public, patients will be consulting their family physicians asking for a general examination. It is at this time that the physician can do a great deal for the patient. The record of the patient's examinations is filed so that at any future time when the patient returns, the information will be on record so that any change from the normal can be detected readily. (It is to the patient's advantage to have all the records in one office.)

The problem is to have the public sufficiently informed about cancer so that they are less fearful of the subject and seek medical advice at the first suspicion of danger. As soon as the patient seeks medical advice the responsibility for that case rests in a large measure on the family physician, who is often the key man in the problem. An early consultation with a thorough physical examination is necessary. Schmitz has emphasized this fact repeatedly. The consultation should include a thorough examination of the part in question, together with a general physical examination, emphasizing the regional lymph glands and the sites where metastases may occur; laboratory tests such as a blood Wassermann, blood count, and urinalysis; and x-rays of the lungs and bones should be done when indicated. The sclera should be inspected for an icteric tint, suggestive of cancer metatases in the liver, the regional lymph glands for any enlargement, the lungs for any areas of dullness, enlargement of the mediastinal glands, abdominal lesions, fluid, and enlargement of the liver. A rectal examination for local lesions and implants should be done. The umbilicus should be examined for metastasis the same as we check the neck for Virchow's glands. Finding these metastases shows that the patient has cancer and also that it is in an incurable form. A bimanual examination of the pelvis should be done wherever possible. The size, shape, position and mobility of

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the uterus and adnexa are determined. Fixation of the uterus and broad ligament infiltration are significant findings in dealing with pelvic malignancy. An inspection of the cervix is important, the Schiller test being done whenever indicated. If still in doubt perform a biopsy. If the lesion is malignant and is confined entirely to the os, that is, without vaginal wall extension and without broad ligament infiltration, the case may be considered surgical, a total hysterectomy being performed.

According to Masson many of the operations which are done are not radical enough; at least not enough tissue is removed from the vault of the vagina, and from the bases of the broad ligaments, where extension of the disease is most likely to occur. Any operation that carries a risk of mortality of more than four per cent. is not justifiable according to him as "the ultimate cures obtained by radiation about equal the number obtained by surgery when a high operative mortality exists."

The importance of the ovary as a site of malignant change cannot be overestimated. The physical changes, which are numerous in the ovary, continue from puberty until after the menopause. This factor, together with the fact that the ovary contains many types of undeveloped cells and embryonic tissue, may account for the high incidence of cancer of this organ. Furthermore, the patient who is afflicted with this disease is at a decided disadvantage since these lesions produce few symptoms in their earlier development, and it is in this period that they must be removed if a greater number of lives are to be saved. It is uncommon, however, to encounter cancer of the ovary in a woman less than 35 years of age, it being a disease chiefly of the fifth decade of life and beyond, although it can and does occur in younger women, which makes it imperative to bear in mind the possibility of its presence. The fact that few symptoms are produced by these lesions in their early and operable stage is one of the principal arguments in favor of periodic physical examinations. The results are so disastrous in many cases that it would be an excellent rule for every woman beyond forty years of age to have a pelvic examination twice a year by her family physician. I am sure this would contribute to a reduction in the death rate from this source.

The diagnosis of cancer of the ovary is not always easy, except in advanced cases, and the true nature of the disease is often not settled until the abdomen is opened surgically. A cystic mass in the region of the ovary of a young woman is usually not regarded as a serious matter since many simple cysts normally rupture and disappear spontaneously. However, the nature of such lesions should be checked each month, and, if they continue to enlarge, they should be suspected of being cancers and should be removed. The situation for women in the fifth decade of life and beyond, however, is quite different. The incidence of cancer is such that every cystic ovarian mass should be considered malignant until it has been proved to be benign by surgical removal, and pathological examination. The late symptoms of cancer of the ovary, which unfortunately are often the first symptoms experienced by the patient, are discomfort in the pelvic region and rectum, a smooth or nodular mass in the lower abdominal region and loss of weight and strength. Such symptoms, when present, render the diagnosis simple and easy but usually indicate an inoperable condition.

Cancers of the ovary with which we are particularly concerned are of two varieties, one being the malignant cysts and the other the primary carcinomas. Malignant cysts are called "carcinomatous cystadenomas" and for reasons previously stated, composed one of the most important groups of tumors encountered in the pelvis. They are of interest because they are chiefly multilocular and 50% of them involve both ovaries. Fortunately, the malignant growth tends to remain confined within the cyst for long periods, which characteristic is in the patient's favor since it is possible to remove such cystic tumors completely and effect a cure. Some of these cancers, however, perforate the wall of the cyst, which is particularly true of those of the higher grades of malignancy, and then spread to adjacent organs in the pelvic abdomen. These perforations take place as a rule near the pedicle of the tumor or at the points of greatest pressure. In such cases the prognosis is relatively poor although not entirely hopeless. There is a peculiar characteristic of these tumors that even though they have extended to other organs, the secondary growths sometimes subside or their growth is held in check by removing the parent growth in the ovary and by following this procedure by intensive irradiation. We are of the opinion that

every patient with cancer of the ovary, if a reasonably good surgical risk, should be subjected to a surgical exploration unless pelvic examination reveals the pelvis to be a solid mass of malignancy.

Dermoid cysts, which are composed of products of the skin and therefore contain hair, teeth and sebaceous material, occasionally become malignant. These tumors are, of course, present at birth and since they may be malignant should be surgically removed as soon as they are discovered. The consequence of neglecting a malignant cyst of this nature is 100% fatal, because the resulting cancer is always an epithelioma of a high grade of malignancy. Attachment or perforation of the capsule of such growths stamps them as incurable. If they are unattached, however, cure is almost sure to follow their surgical removal.

There are two types of primary carcinoma of the ovary which concern us most: the papillary adenocarcinoma and the solid carcinoma. It is in this group of cases that symptoms frequently are not present during the early or favorable operative period. Some of these growths can be discovered, however, by routine pelvic examinations and often the patient is amazed to learn there is something wrong with her pelvic organs. Papillary adeno-carcinomas originate as a rule from the surface of the ovary and, unfortunately, are of a high grade of malignancy. Since they extend from the surface of the ovary, they become attached early to adjacent structures and shortly assume such proportions that they become inoperable. Fluid in the abdomen is the rule, and extension to other structures occurs in a few months. It is known that the prognosis is generally poor for cancers of this type, although many of the secondary growths become quiescent, as is the case in malignant cysts if the parent growth is removed and the procedure followed by radium and x-ray therapy. Counseller reports the longest duration of life in such a case following this method of treatment was twenty years. It is important to note also that there is a high incidence of bilateral involvement, so that it is advisable to remove all the pelvic generative organs even though the growth may be confined to only one ovary.

Solid carcinomas of the ovary represent a much smaller group, and they also vary in the rate of growth. Their presence is not usually suspected, and consequently there is a high incidence of pelvic attachment and extension to distant lymph glands. Fluid in the abdomen is a frequent finding and a bad one in relation to prognosis. The seriousness of this group of cancers was revealed in a recent study which showed that of the patients with cancer of grades 3 or 4, more than 75% succumbed from recurrences within a few months. The method of treating ovarian cancer is early surgical removal followed by radium and x-ray therapy. In some cases of grade one, according to Broders, cancers which are confined to the ovary, irradiation is omitted. In many cases the lesions are definitely not amenable to surgical treatment but are treated if the patient's condition will permit, by intensive radium and x-ray therapy.

The fact that carcinoma of the stomach is curable is sometimes obscured by the prevailing attitude of physicans and laymen toward the disease. Although cures are rare they are to the surgeon a constant reminder of his responsibility and of the fact that only he can offer the patient a possibility of cure. Balfour analyzed a series of cases for whom a partial gastrectomy for cancer of the stomach was done and in 39% of the cases the cancer could be removed; in another group 43%. In about half the cases of cancer, a stomach exploration is warranted and in about half of these cases the growth can be removed.

These figures show that at present an attempt at cure can be made in less than 25% of cases of cancer of the stomach. Careful study of the history of those cases who live twenty years or more following resection for cancer emphasized the great variability of the disease. There is no characteristic syndrome of cancer of the stomach although there is a more or less constant syndrome in the average case. There are so many exceptions to the rule that the clinician will, on keen recognition of this fact, establish a diagnosis of the disease at a time when the symptoms are bizarre and when surgery can offer some prospect of cure. Analysis of the gastric content in these cases emphasizes its unreliability as a diagnostic aid, for in 50% of the cases the concentration of free hydrochloric acid was normal or above normal. In 30% of the cases some degree of rentention was present.

The responsibility for the present appalling situation is, namely, that in a disease in which cure is possible not even an attempt at cure can be made in 75% of the cases when the patients

are first seen. There are two major reasons for such a situation; the nature of the disease and the delay in diagnosis. It is unfortunately true that in a considerable number of cases of cancer of the stomach, the disease begins in a situation in which removal of the growth is prohibited even if diagnosis is early. A lesion of the fundus is the most unfavorable for many reasons, but chiefly because early symptoms are few and insignificant and also because the lesion is relatively inaccessible. Lesions of the antrum and those which extend to the pyloris are commonly supposed to be most favorable for removal and cure, but due to the extensive adjacent lymph nodes in this region which become involved early, and cannot be as thoroughly removed as the regional lymphatic structures of other segments of the stomach, lesions at this site are less favorable for cure. The size of a tumor of the stomach may give an erroneous impression as to operability. A large freely movable cancer is more likely to lend itself to removal as a rule than a cancer which cannot be palpated. Large tumors are usually of the colloid type. The lesion is sharply demarcated and the walls of the uninvolved portions of the stomach are flexible and therefore suitable for resection and safe anastomosis.

The chief reason for the fact that in only 25% of cases can the growth be removed is failure to make an early diagnosis. It cannot be too strongly emphasized that it is extremely difficult for even the most able clinician to make a diagnosis of cancer of the stomach. The fault does not lie with the clinician but with the fact that symptoms and signs are either lacking or most insignificant in the early stages of the disease. The experienced clinician recognizing this, will not delay until definite symptoms and signs appear but will on suspicion demand repeated fluoroscopic examinations by a competent roentgenologist. Such a physician will not be deluded into believing that a patient who is in apparent good health with normal values or gastric acids, with no loss of weight, with no palpable tumors, but with unexplained dyspepsia, cannot have cancer of the stomach. The first step, therefore, in successful treatment of cancer of the stomach depends upon a wise physician and a competent roentgenologist. It is, of course, most unfortunate that, since the early symptoms of cancer of the stomach are so slight, patients do not seek advice early —a situation to be met only by public education and periodic examination.

Following recognition of a lesion of the stomach the responsibility must be assumed by the surgeon. It is good practice to follow a rule that in all cases of cancer of the stomach, exploration should be carried out unless irremovable metastatic growths can be demonstrated. Exceptions include cases of elderly patients in which roentgenologic examination results in the lesion being pronounced inoperable and in those cases in which there is clinical evidence of the cardia being involved. For young patients whose condition is too poor, a fluoroscopic report of inoperability should not necessarily contraindicate exploration, since occasionally removal is possible under such circumstances. When rectal, umbilical or supraclavicular implants can be demonstrated, operation is inadvisable except for obstruction of high grade; then gastroenterostomy under local anesthesia may be worth while to the patient. The surgical management has two purposes in view: cure and palliation. Kocher showed that resection of the primary local lesions of the stomach without regard to lymphatic metastasis, subsequent to resection, gave the patients an average of fifteen months of comfortable existence against five months after gastroenterostomy.

No doubt the question often arises in the mind of the family physician as to what he should do with the untreated cancer patient. They often have bleeding, foul discharge, pains in the pelvis, marked secondary anemia and a depressed spirit. They are a real problem and it is believed that they should receive some treatment, either radium or x-ray or both. Before treatment it is impossible to determine the amount of improvement and benefit a patient will obtain from that treatment. Often one palliative treatment improves the patient's state of well-being, temporarily it is true, but by treatment the period of decline through which all cancer patients pass is considerably shortened. To have any relief of symptoms justifies the treatment.

Concerning a study of this sort, the main and perhaps the only thing to be learned is the fact that patients with cancer are in a deplorable state before they are even seen by a physician. What are the reasons for the large number of patients with such advanced carcinomas? In the first

place, the very nature of the disease makes its early recognition difficult, as previously mentioned. It is often symptomless until the growth is so large as to produce mechanical disturbances. Even growth too small to produce symptoms can and do give rise to widespread and fatal metastases. As the refinements of diagnosis increase this group of cases will gradually be reduced.

In the second place, a far greater number of early cases would be detected if a routine and complete examination were done on all patients at their first visit to a physician. The cases most likely to be detected earlier are those of the skin, buccal mucous membranes, breast, cervix, uteri and rectum. All these growths are palpable and all, excepting those of the breast, can be brought under direct vision. Theoretically, all malignant growths can, in the early stages, be completely and wholly removed. The time to do this is before they produce symptoms, and such growths can be found only by careful and complete physical examinations, as previously emphasized.

On the other hand there still remains the responsibility of the patients themselves. It is rare to find a person who is not afraid of the truth, at least so far as cancer is concerned. Aside from not wanting to know the truth, many persons believe that cancer places a certain stigma on the family, and though suspecting the presence of cancer, stay away from a physician as long as possible. The reasons just given are probably the main ones to account for the fact that the average time elapsing after a patient noticed a lump in her breast and the time she sought treatment was 350 days—almost a year. Nothing but intensive and widespread education of the public concerning the necessity of routine and complete physical examinations, and the urgency of such an examination as soon as any unusual growth or symptoms are noticed, can eliminate such negligence in the future.

33 S. Island Avenue.

Surgeons were greatly surprised to find a bolt, nut and washer in the brain of an Illinois man. It must have been their first experience in opening up a politician's head.

Having become accustomed to high altitudes, the national debt doesn't seem to fear any ill effects if it climbs still higher.—*Indianapolis News.*

SIGNIFICANCE IN GROUP HOSPITALIZATION PLAN

T. J. Lamping, M. D.

CHICAGO

Hospitals, most of them, and those whose welfare is at stake now, came into existence reflecting the fine traits of our ancestors; science, natural expansion and the great developments taking place brought about growth and improvements. Fundamentally, they reflect the fine spirit of self-sacrificing women and unselfish men who gave what they could afford, or more, to a courageous consideration of those who were sick and needed help; it included the honest poor.

The price of hospitalization was within their reach; if not, it was made up to them by bequests.

The bequests to these institutions, that gave them a foundation whether made for humanity's sake or as some expiation, made the hospitals a spiritual and democratic part of the country, that fitted in the freedom intended, brought about, and assured by the American revolution. To tamper with them was a crime, but to inflate the hospital from outside influence for greed—the respectability and stability of the institution affording the incentive to exploitation—is to lose our democracy and invite dictatorship. It takes a macabre instinct to do this. The hospitals have been the expression of a civilization and a hope of humanity throughout all Christendom; when drastically or viciously altered, their decline is a *"writing on the wall,"* for our decline.

THE PLIGHT OF THE HOSPITALS

When the world war was on a hospital undertook and completed a very pretentious skyscraper addition that increased its accommodations fourfold.

One reason assigned was: "When the war-wounded came in it would strain all hospitals for their care and this hospital would be prepared." It did not serve that purpose; the Government hospitalized its soldiers in its own institutions.

Soon after, another large construction invaded the hospital field; its purpose was to handle pulmonary diseases. It failed, because these unfortunates were taken care of elsewhere and the new arrival in the hospital field never functioned as a hospital.

Floating of bonds at this time was an easy prop-

osition and on credit forced upon them to use surplus bank funds, the hospitals rebuilt extensively, either adding large additions and nurses' homes, or entering the hospital field as new public, secular, or private institutions. In this way they became *"white elephants"* and a bankers' pet.

The depression converted extra bank buildings, created under the conditions of easy money and lax operation, into undertaking establishments or night clubs; athletic clubs to easy-going room accommodations, and movie palaces like overbuilt hotels and office buildings, to huge vacant mausoleums.

The hospital capacity increased five and sixfold, not so much from increased demand or need of new accommodations, as a disposition to build and equip them with private rooms and baths like high priced hotels; in keeping with the times, and the ready money available. The rates increased tremendously, nursing service was not readily established through training schools, because young women were attracted by the greater inducement in business; private nursing service at greatly increased cost took over largely the economical nursing service of the training schools. Hospital accommodations for twice the population of the city were in evidence; entire floors, fully equipped for use were shut off; no patients for them. These vacant floors matched the vacant floors of hotels and office buildings: monuments to cupidity and overconstruction.

Skyscrapers in the business section have been reduced to two, often one story buildings, even scrapped entirely so the ground could be used for parking space. Hospitals are tax exempt and have not had to go that far, but they present their picture of abandonment and disuse. It would be exception to the rule if a hospital functioned as anything but a hospital, and bond holders and creditors of a hospital, even though disposed to satisfy legal claims could not advantageously alter that function.

There is some pathos in this uncalled for overgrowth of high class hospital accommodations and its disuse, but it is good evidence of the health of the community, even though depressing for the hospitals; may it create the slogan, *"Chicago cannot fill its hospitals."*

The hospitals need to trim themselves as they undoubtedly are doing, to supply and demand; their creditors, bankers and bond holders have to go along with them, but these creditors can use Group Hospital Organization to promote hospitalization for revenue.

Whatever the predicament of the hospitals, they are our institutions, typifying American democracy in their care for all races, creeds and color. To have them closed or altered as political opportunism may prevail by Government or State subsidies, is to invite dictatorship and socialization of medicine.

The medical profession is not to blame for the plight of hospitals from overgrowth; it comes from the bond purveyors and easy money extended susceptibles who believed in large institutional expansion and took the seductions offered.

Factories with no output, but constructed as a physical "set up" for sale of bonds was a picture of this period, and the hospitals, though they have no broken windows and battered walls, fit into this picture. The peak of hospital expansion occurred in the large, metropolitan areas, and are to be considered as a "debacle" of their region from easy credit and credulity.

A PANACEA FOR THE STALE-MATE AND STAGNATION IN HOSPITAL CONDITIONS HAS BEEN ADVANCED BY WHAT IS CALLED, *"The Group Hospitalization Plan."*

Briefly, the *"Group Hospitalization Plan"* insures employees at their respective occupations in blocks of ten at $9.60 annually to each member. It offers hospitalization during the year of membership for twenty-one days at $6.00 per day (the lowest rate in the hospital).. The hospitals want $7.00 per day. The average stay in the hospital is ten days and approximately five per cent. of the members use it. Members of *"Group Hospitalization"* are selected from those who are at work: steady employment is evidence of not needing hospitalization—an important consideration. Some lines of employment are preferred for members to other lines, i. e., bank employees are more desirable than school teachers. The latter need rest periods in their vacational season and hospitalization at $9.60 appeals too strongly to them.

THE GREEKS COME BEARING GIFTS

Bank employees are the primary impulse in the *"Group Hospitalization Plan."* Tycoons in the banks, who incidentally have increased their capital as much as eight times by foreclosures

during the depression, and have a pertinent concern in the revenue of the hospitals because of interest payments and bonds, make it understood they favor *"Group Hospitalization."* The hospitals are in the "Pale" and no executives in financial institutions are coming to their rescue with any considerable contribution as a humane and altruistic gesture, though their great profits well enable them to do so.

For reason of expediency, sycophancy, or even intimation to do so, employees, already cut in their pay, front, in the name of banks or business as philanthropists; a large newspaper has editorial approval of its employees joining up; radio broadcasters and columnists express their approval. The scheme also takes in groups of ten, approved for selection by the promoters, outside the preferred occupations, who are not too "hospital minded."

The *"Group Hospitalization Plan"* showed on a recent public report 38,000 enrolled, and 1,800 hospitalized, the average time of the hospitalization ten days, at $6.00 per day. The hospitals want $7.00 a day. It certainly has some appeal, or is made to have appeal when many readily subscribe at so good a price.

On the 18th of April (Paul Revere Day) this year a very determined effort, simultaneously and with like accord, in thirty-nine other cities, was made to put the *"Group Hospitalization Plan"* over on a large scale propaganda.

To determine value of *"Group Hospitalization"* compare it briefly with the Benefit Association of a large manufacturing plant, "That functions economically and satisfactorily with its own setup at a price better or comparable to the *'Hospitalization Plan'."* At ninety cents a month ($10.80 a year) an employee gets $40.00 a month for three months' sickness or disability. At sixty-five cents a month ($7.80 a year) an employee gets $30.00 a month for three months' sickness or disability. In event of natural death either group gets $50.00, and in event of accidental death $1,000.00 or $500.00, respectively, to their estate; or $1,000.00 or $500.00, respectively, to themselves for total disability.

ARE THERE ANY ADVANTAGES?

In not stipulating that money received must be used for hospitalization? In the satisfaction of knowing some money comes into the family? In meeting the premiums by small deductions from a pay check each month? In knowing there is a considerable sum in event of accidental death, or permanent disability, and $50.00 in event of natural death? There are also psychological, social and physical benefits evident to a man and his physician; encouragement to remain at home. Will a man scrap his insurance for the drab luxury of *"Group Hospitalization?"* He will not, unless a bank employee. The price of an Irish Sweepstakes ticket which is $2.50 would suit these men better to assist hospitals, and, if feasible, they would swarm to it, in preference.

Will *"Group Hospitalization"* so readily pushed to a certain point in selective groups stagnate at that level with $275,000 or more in the hands of promoters for promotional activity, or will a recognition of its limits be seen and the money apportioned to hospitals? *Who knows?*

The scheme is not entirely to avoid "Passing the Hat," or to tide a man over, or partly over, an acute illness or accident, or to provide a refuge for a solitary individual who would otherwise impose upon friends or relatives.

The doctors are accused of lack of comprehension on this scheme of not cooperating for the benefit of the hospitals; also, reproached for not selecting members of their medical organization to officially endorse the plan by serving on the Group Hospitalization Board. It is publicly stated, "the medical organization endorses the plan"; that is not true. The assertion then comes forth, that doctors will be found who will serve on the Board: likely so, but it will be a false front and not change the complexion. Many people respond to the plan because they want to help the hospitals and they regard the plan as a modest way to do so, subscribing as they would to the American Red Cross or any demand stressed for humanity.

This effort to promote membership in an organization alleged to help hospitals gets a ready and respectful audience, if not an understanding one.

QUESTIONS ARISE, THAT ARE NOT EXPLAINED

Is the *"Group Hospitalization Plan"* on a nonprofit basis? Is the effort a scheme to satisfy financially interested creditors in institutions that originally transfixed the hospitals? How do the promoters handle funds, except those disbursed for hospital services? These are considerable excess funds. Is there any intention of reducing the cost for care of patients from the excessive charges the hospitals make because their

overhead compels a large amount for interest and bonds? Is the general public asked to pay for a "dead horse" by satisfying creditors' claims against inflated institutions by appeal to humanity and altruism?

The House of Delegates of the American Medical Association, Section 9 of the principles formulated for *Group Hospitalization* states, "Don't make Group Hospitalization a plea to help the hospitals financially; make it a public spirited proposition to do so." Helping out inflation and creditors is not mentioned in these rules, but the delegates do recommend a non-profit organization made up of physicians from medical societies and hospital groups.

The *"Group Hospitalization Plan"* as it now proceeds is, and can be, more of a racket, like the hospital suffered before from its friends (?) on the outside, and the indications are, the hospitals are again being cultivated for a forced production of forced revenue. Hospitals are not helped by outsiders capitalizing the necessities of the hospital by public appeal to humanity and altruism, unless, the "dead horse" stage is admitted and the hospitals exploited to the condition they are in, benefitted by financial reorganization. Substantial reduction of rates are in order so a patient will not feel he has been taken by the heels and shaken loose from all he has, particularly when incapacitated by sickness or injury.

To conserve our hospitals is all right and necessary, but they have become so much a separate, billing proposition, on their own, they haughtily remove themselves from the physicians who place the business in their laps.

Some doctors send as many as one-third of their patients to the County Hospital; these patients cannot afford a pay hospital. When the patient pays his way, as the doctor instructs him to do, the "shake-down" from excessive charges by the hospital starts a wail from the patient carried to the four corners of the earth; it hurts the doctor also; he must be a smooth liar or a wonderful diplomat to placate and reconcile the patient.

It does not always succeed, but it impresses the doctor with his duty to scrutinize agencies allegedly cooperating with him in care of patients.

The statement that these agencies are business propositions outside and independent of the physician's consideration is all "bunk"; it is not presumptuous for the doctor to question cupidity and its exploitation, effecting his interests. It is not in evidence; approval by official medical organization is even slightly responsible for the plight of the hospitals from over inflation. Lay promotion, retracing its steps to work again on the hospitals, through the susceptibility of the public to humanitarianism and altruism could ruin the institutions. *Group Hospitalization,* if it is on a non-profit basis and adjusted to economic conditions, might have some consideration with official medical study and approval because of the susceptibility of the public to it; but don't let it have its own way to make "suckers" out of the public to support a "racket."

There is no disposition in this article to argue the overhead of the hospital when it comes to sane up-keep, the cost of a training school, the salaries of heads of departments, the purchase of scientific equipment and the general welfare of the patient benefitted thereby.

When the rates are increased, one or two hundred per cent to meet inflationary credit, that is an "Old Man of the Sea" about the neck of the hospital, the legal process of removing the incubus is in order before injecting life in the hospital. The susceptibility of the hospitals to lay influences that capitalize hospital wants and conditions to selfish interest is no credit to hospital intelligence that permits it. The *"Group Hospitalization Plan"* in not accounting for all its revenue avoids the "headache" of apportioning funds other than what are allowed without question for hospital services rendered.

Relatively the physician is as important as the hospital that receives his cases and no independence of the hospital toward his relationship is appreciated, particularly when the patient is gouged thereby.

POSTCRIPT

Commenting on the "Paul Revere" Broadcast, April 18, 1938, on WMAQ, 8:30 p. m., that date, reports of the *Chicago Tribune* state: "Mr. John J. Abbot, Vice-President of the Continental Illinois National Bank & Trust Co., told of the successful application of the plan to employees of the bank." This statement is as expected and indicates "Bank Interests" are out to collect on hospital inflation. Nothng like the bank's purpose was intimated, nor were the

following points mentioned in the broadcast:

That hospitals were greatly over expanded.

That a normal price to sick people should be $1.50 for ward bed, $2.50 for two bed room and $3.50 for a single room.

They won't throw you out if you go to a first class hotel and ask for a room at $2.50 or $3.00; they are glad to see you. You can even do better on rates if you are going to stay a while.

Hotels are not exempt from taxes either.

The *Group Hospitalization Plan* offers $6.00 a day for 21 days; the hospitals think they should have $7.00. The difference between $7.00 and $1.50—$5.50—is for the creditors. No wonder Mr. John J. Abbott, Vice-President of the Continental Illinois National Bank & Trust Co., told of the successful application of the plan to employees of the bank. Can a duck swim?

Nothing was said in the broadcast anything like this:

We, the *Group Hospitalization Plan,* from our last report showing we could do so, apportioned $2,160.00 to each hospital (there are 50 hospitals in Chicago, though not all would participate) for services rendered; the rest of the fund $5,440.00 to each hospital is our fund for operating and is not to be discussed.

Cities participating in the *"Group Hospitalization Plan"* are mentioned—those on the west coast, south, midwest, and lastly the east, where it has been established longest, the plan is mentioned last. Stimulating enthusiasm in new regions is not to conflict with experience and sophistication of established conditions.

Quoting somewhat further in the article from the *Chicago Tribune, "Group Hospitalization* is not a panacea for the public or the hospitals, but it does help the patient by paying his hospital bill, the doctor by increasing his chances of collecting a fee, the tax payer by removing some people from tax supported to private hospital (think how remote that is), the business man by decreasing need for philanthropy (a strong claim for introducing plan), and the general public by removing the barrier to the economic care (a platitude for the Government.)

To call the *"Group Hospitalization Plan"* a panacea is a mistake; it is more a "Bankers Special" for collection.

The Chicago plan is mentioned specifically as the one entitled to recognition in this field. The promoter also stated: "Employers were hustling employees to join the plan and ultimately an enrollment of ten million throughout the country was expected."

Quotes he further, "It was expected to arrest a trend to so-called socialization of medicine more than any other thing possibly could do" and then continues: "Let us remember THIS government cannot successfully invade the field of Social Service until private and group initiative fall down. When private and group initiative do fail to provide needed social service through cooperative means organized on a community basis (the 'Banker's Special' fits this idea), the politician is compelled to vote for the invasion of that field by Government."

The promoter means "A Dictatorship and Socialized Medicine." If pumping misguided funds into waterlogged institutions, under the covetous eyes of politicians and doing this as a country wide procedure, is not a direct invitation to Dictatorship and Socialized Medicine, nothing else is.

What politician ever failed to play a predicament, particularly in public welfare, except to his own advantage? He is looking for these things. How long has it been going on? He will sure grab it. The doctors on this broadcast were from the American Hospital Association, their jobs depend upon expression of appreciation for the plan.

In a Hitler parade in Berlin, placards announcing *"Give Us Back Our Colonies,"* were accompanied by persons jigging along, dressed as Africans: they held up the placard, *"Give Us Back Our 'Funny' People."* The hospitals need to get rid of their *"Funny"* people who at heart are not medical in genuine concern for the public or the hospitals, but project themselves in the hospital field as philanthropic at the expense of underpaid employees to collect frozen assets. *God save the hospital from its friends* (?).

The worst is yet to come and when it does come, the promoters of *"Group Hospitalization"* can side step, glibly denouncing doctors for lack of enthusiasm, comprehension and cooperation. They can set themselves up in something else with experience handling money from "suckers" to "sucker" institutions; a set-up politicians will not very long ignore and which they will sieze greedily, not for a "cut in" but all of it. *That's how dictators are born.*

We can have another Valley Forge, and we stand at Armageddon when we see the whites of their eyes. Except for this article there is no expression from any organization, medical or secular, the "Banker's Special" (The Hospital Group Plan), or from the hospitals, notwithstanding church connections, that the cost to the public is outrageously and criminally high. The rates are just simply accepted as facts that are to be.

Unfairness in costs to patients is unfairness to the doctors and, notwithstanding the democracy of our hospitals and medical institutions, their plight puts them on the spot. Maybe they will incubate a Dictator. The iron hand of a Dictator can smite alike the just and the unjust, and neither religion nor racial pride will keep from trailing in the dust or pushing to the wall those who failed the trust they assumed.

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PREGNANCY WITH ONE KIDNEY

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PREGNANCY FOLLOWING NEPHRECTOMY

The majority of physicians feel that following complete recovery from nephrectomy and after compensatory changes in the other kidney have taken place, the life expectancy for the patient is equal to that of a person with two normal kidneys. The remaining kidney, through an hypertrophy which takes place within 20 to 25 days after nephrectomy, takes over the function of both kidneys. In fact, where the diseased kidney has not been functioning for some time the normal kidney has assumed the load of both before operation.

I wish to consider here whether or not this same condition holds for women who later become pregnant and bear children. Is the remaining kidney able to take over the added load of pregnancy without overtaxing itself and perhaps shortening the life of the patient?

It was formerly thought by many authorities that pregnancy should not take place in a woman who had previously had a nephrectomy, and as a result many pregnancies have been terminated on this basis as soon as the diagnosis was made. The opinion of most physicians now is that this was a mistake, and that properly selected cases can go through a normal pregnancy with little or no difficulty.

Of course, there is an increased load on the single kidney during pregnancy and labor, but the remaining kidney has compensated for the loss of its mate so that the urinary function is not materially decreased for any length of time and many of these patients carry on with no albumin, a normal sediment and normal function throughout. However, the careful selection of cases and the proper handling of those selected is most essential if pregnancy is to be allowed to take its course.

First of all, the cases of renal tuberculosis, which in many ways are the most serious of kidney conditions.

Kanter and Klawans[1] stated that patients having nephrectomy for this condition should be sterilized because most renal tuberculosis is bilateral, although it may not appear in the opposite kidney for several years after the primary focus has been removed.

Crabtree and Cabot[2] observed 29 patients on whom a nephrectomy had been performed for renal tuberculosis and all 29 showed albumin, from a trace to large amounts, for from five to 15 years after operation. They stated that many authorities look upon future pregnancies with apprehension, and conclude that these patients must have unusually close scrutiny and that probably two to four years, with the patient showing no evidence of renal pathology, should pass after the operation before pregnancy is permitted to take its course.

Mussey and Crane, at the Mayo Clinic, reported five patients with renal tuberculosis on whom nephrectomy was carried out, and each of whom later had a normal pregnancy with delivery of a normal baby at term.

It is probable that most of these patients should not become pregnant because we cannot be sure that the patient is absolutely free from tuberculosis. She may possibly have a quiescent lesion in the remaining kidney or in the chest which could be overlooked and which very likely would become active during a subsequent pregnancy and labor, with destruction of the remaining kidney.

If, however, an attempt is to be made, for any reason, to carry the patient through a pregnancy, she must have an unusually careful ex-

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amination, including all possible diagnostic procedures for tuberculosis and kidney function. If at any time during the pregnancy evidence of activity of any tuberculous lesion or evidence of any kidney damage is found the pregnancy should be terminated.

Secondly, in patients with malignant tumors of the kidney for which nephrectomies are performed, with perhaps rare exceptions, pregnancies are contraindicated because the tumors are so often recurrent.

Thirdly, as congenital cystic kidney is a bilateral condition, patients with this disease should not be allowed to bear children.

Furthermore, if a severe toxemia pyelonephritis, or pyelitis, develops during pregnancy in a patient with only one kidney, the pregnancy should be terminated rather than to allow the kidney to be subjected to the added strain.

However, in women on whom nephrectomy is performed for conditions such as unilateral pyonephrosis, nephrolithiasis, trauma or non-malignant tumors where there is less chance for recurrence, pregnancy can take place and follow a perfectly normal course.

H. B. Mathews[3] has collected the records of 241 women who had nephrectomies and later became pregnant. There were 265 labors in the series of which 250 were normal and 15 complicated. Two patients died. He concludes that pregnancy following nephrectomy is safe with certain exceptions, and that these patients should have a more thorough examination, especially for kidney function.

Hartmann,[4] of Paris, reported a series of 74 patients who became pregnant after having a nephrectomy. Seventy-two of these had from one to four pregnancies without maternal complications and with only two abortions. Two cases died, one of eclampsia and one of renal insufficiently. Seventy of them went to term and delivered normally.

This report suggests the question, How many pregnancies can a woman be safely allowed after a nephrectomy? In Hartmann's report some of the patients had as many as four pregnancies with apparently no serious results. However, pregnancy, labor, and the puerperium certainly do subject the kidneys to an added strain; just how much it is impossible to state. Even though there is no apparent damage done to the kidney, I believe that a person with one kidney should limit the number of risks to which she subjects her one remaining kidney each time she goes through a pregnancy.

NEPHRECTOMY DURING PREGNANCY

Schmidt[5] collected the records of 35 patients on whom a nephrectomy was performed during pregnancy and made a study of the whole group. There were two maternal deaths, or 5.7 per cent. In seven patients the effect on the pregnancy was not indicated. One patient was operated on almost at the time of delivery and spontaneous birth of a living child followed. Of the remaining patients, 21 or 77 per cent. had normal labors at term. Three had spontaneous abortions, one had an induced abortion, and one delivered a dead fetus. It was stated that in only four patients, or 15 per cent., were there harmful results to the fetus. They were operated on from the second to the eighth month of pregnancy.

Mussey and Crane,[6] writing from the Mayo Clinic, state that operation on the kidneys should be done during pregnancy if the lesion is such that the life or future health of the mother would be jeopardized by delay. They reported nine nephrectomies performed during pregnancy; five for renal tuberculosis, two for pyelonephrosis and one for infected hydronephrosis. One patient aborted. There were no maternal deaths.

The risk for surgery on pregnant women is very little more than it is for non-pregnant women and should cause little added concern. The time of selection for surgery is during the first five months, preferably after the third month. The number of miscarriages is not appreciably greater, if the operation is done with care, than that to be expected from any series of pregnant women, and in any event is no contraindication to necessary surgery.

CASE REPORTS

1. The first case which I previously reported is that of a nephrectomy during the first month of gestation, the pregnancy being undiagnosed, and which was followed by a normal pregnancy, labor and puerperium.

2. The second case is that of Mrs. D., a primipara, age 25. She was operated on for a suspected acute appendicitis in 1933, at which time an acute salpingitis was found. In 1935 she developed a cystitis and pyelitis and at this time a pyelogram demonstrated a congenital absence of one kidney.

She became pregnant in August, 1936. Her pregnancy was normal throughout. The urine showed no abnormalities.

On May 10, 1937, she was delivered of a full term baby by low forceps, following a 13-hour labor. Pan-

topon grs. ⅙ and scopolamine grs. 1/150 were given for analgesia, and ethylene anesthesia was used for delivery. She had a normal puerperium. The blood count showed 85 per cent. hemoglobin and 4,900,000 red cells. Blood chemistry on May 18, 1937, was normal.

3. The third case was another primipara, age 24, who in 1933 had a left oophorectomy. Injury to the left ureter at this time resulted in hydronephrosis and a left nephrectomy was performed. In 1934 she had a mastoidectomy followed by a lateral sinus thrombosis.

In August, 1936, she became pregnant, and after a normal full term pregnancy her labor began May 5, 1937. She had a fourteen hour normal labor and breech delivery with manual aid and Piper forceps on the after coming head. Morphine grs. ⅙ and scopolamine grs. 1/150 were used as analgesia and ethylene anesthesia was used for episiotomy, delivery and repair. The puerperium was normal and she left the hospital on her tenth post partum day.

The urine was normal throughout the pregnancy and puerperium. Blood count on the fourth post partum day showed 90 per cent. hemoglobin and 4,970,000 red cells. On May 11, 1937 the blood chemistry was normal.

Urea clearance tests were done on these patients but are of no value in this type of case, so they are not included in this report. All three of these patients are at preesnt in good condition with normal urines.

SUMMARY

1. The life expectancy for a patient following nephrectomy is as great as that of a normal person, providing the remaining kidney is normal.

2. With certain cases excepted pregnancy may follow a normal course after nephrectomy with no harmful results to the mother or child.

3. It is questionable whether or not a woman should go through a pregnancy following nephrectomy for renal tuberculosis. At least she requires very careful study and consideration.

4. Nephrectomy performed for malignancy should preclude further pregnancy.

5. Nephrectomy, as well as other necessary surgery, should be done during pregnancy, if the life or future health of the mother is jeopardized by delay.

6. In case any complication arises during pregnancy which is dangerous to the remaining kidney, the pregnancy should be terminated.

7. The risk for surgery during pregnancy is very little more than for non-pregnant patients, and the incidence of spontaneous abortion is not appreciably greater than that to be expected under normal conditions.

8. Three cases of pregnancy with a single kidney, all of which had normal prenatol courses and deliveries of normal babies, are reported.

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SOME GENERAL ASPECTS OF MODERN THERAPY IN MENTAL DISORDERS

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Quite in contrast to their early history, mental institutions have in the last few years wrought much change in the care and treatment of the mentally ill.

In the primitive days mental cases were placed in institutions primarily for the protection of society, rather than for the benefit of any mental therapy they might receive.

There has been a great evolution of thought, and mankind has come a long way in its consideration of the mentally disordered since the time when these poor, unfortunate members of society were thought to be bewitched and possessed by evil spirits and demons.

During the primitive era great wooden stockades were constructed for the purpose of safely housing those with mental disorder ,that society might be protected and spared from the contact of their presence.

The type of treatment given those poor unfortunates was only in keeping with the primitive conditions of the times when strong chains rattled from human limbs; where indifference to mental suffering prevailed, and restraining methods knew no bounds.

Whatever advancement has been made in the field of psychiatry, it must be remembered that this special field in medicine arose from a very humble, primitive origin, surrounded by a medium of thought scarcely reaching up to a humanitarian basis. After the passing of the

Read before the Jefferson-Hamilton County Medical Society in Mt. Vernon, Illinois, May 11th, 1938.

demon days there gradually emerged from the chaos of darkness an era in which the human element began to give expression indicative of scientific progress. This was at first manifested by a conscious adaptation of a humanitarian attitude, wherein it was conceived that mental patients needed hospital care and treatment rather than sequestration in an asylum stockade. This idea grew until the turning of the asylum into the mental hospital has, in this modern day, become an established fact. Now the same scrutinizing examinations given to patients with physical maladies upon entering a modern hospital, are likewise accorded cases of mental aberration upon their admission to modern mental institutions where they are seeking restitution or readjustment from some psychopathic malady. When the cruel methods of restraints were displaced by the sympathetic attitude of the humanitarian period, the fundamental assumption was that the "insane" person was a sick person. And so in correspondence with these concepts and ideas asylums became hospitals, and restraints and sequestrations gave way to a modernized therapy.

Progress in mental therapy has now reached a stage wherein the mental patient is no longer consigned to a hopeless despair. We live in happier days. The demon era has long since passed. We have seen some decades of a humanitarian epoch in which wonderful strides have been made pointing toward a scientific program which at the present time, gives hope and encouragement for future progress.

The use of hydrotherapy has become a sheet anchor in the management of disturbed patients. The tub and wet sheet packs certainly have a field of usefulness in modern therapy. Occupational therapy has provided the means of employment of both mind and body, and is a very helpful method in the matter of readjustment toward a normal condition.

Recreational activities are now being given attention in all well-ordered mental institutions. We all recognize the importance of some form of recreation in the life of normal individuals. "All work and no play" has long since become a watchword in the routine of our daily activities outside of institutional life, but when considered in relation to those who are confined to our mental institutions, the subject takes on an increased significance and much benefit is being derived from recreational therapy which is being done in the modern mental hospitals of today.

Fever therapy has for some time provided one of the most valuable methods of making a restitution in the organic psychosis known as syphilitic meningo-encephalitis. The advancement made in the chemotherapy of this particular psychosis should not be overlooked. Fever therapy has also been used in the treatment of such cases of functional psychosis as dementia praecox and manic depressive.

While we recognize that advancement has been made in the treatment of some forms of organic psychoses, the field of functional psychoses has remained practically untouched until a few short months ago.

Such mental disorders as dementia praecox and manic depressive psychoses have ravaged the human mind with all their terrors while psychiatry has stood aghast, completely submerged in the feeling of inadequacy to cope with these common mental disorders. However, the record of the recent past brings a very different story in the therapy of dementia praecox and manic depressive psychoses by the use of shock treatment as produced by metrazol and insulin.

More recently the scientific advancement made in the treatment of cases of dementia praecox and manic depressive psychoses by use of the shock method has opened up a field of therapy hitherto unexplored. The results accredited to this method of treatment have created a demand on the mental institutions of our state to increase their facilities to meet the growing requirements of the public. This condition has been met, and special courses of instruction have been given to staff members of Illinois State Mental Hospitals to the extent that perhaps this special modern therapy is now being carried on in every state mental hospital in our commonwealth. While this treatment has not evolved entirely from the experimental stage, yet we feel that sufficient experience has been undergone to warrant much encouragement for the future.

We should like to mention in this connection that the State of Illinois is one of the first among the commonwealths of the nation to place its evaluation on this new form of therapy to the extent of providing facilities for its use without expense to the patient or family. This we consider very commendable upon the part of public officials responsible for this decision.

The most prevalent form of psychosis is dementia praecox (schizophrenia). It accounts for 20% of hospital admissions, and one-half of the beds in mental institutions are occupied with this class of patients. They are usually introverts with broken personalities. Dementia praecox is not only the most prevalent form of psychosis, but it is also the most inscrutable and terrifying. Terrifying because of the hopelessness implied in its name: premature senility. The national recovery rate, including those discharged as much improved, has remained below ten per cent. Though it attacks few over 35 years of age, its sufferers grow old in hospitals. They occupy about half of the 450,000 mental beds in the hospitals of our nation. Inscrutable because of this sphinx-like facade which shows neither joy nor sorrow nor fear, hence gives almost no point of contact for cooperation.

New methods for treating mental disease are now being found in brain surgery, postmortem research, drugs and diets. Insulin, for example, may prove to be a very valuable adjunct in dementia praecox therapy. However, much publicized reports of 80% recoveries in the Vienna clinic, where it was first tried, have resulted in some disappointment here in this country. Relapses indicate that benefits may not be lasting. So far, it is chiefly helpful in very early cases, and by no means in all of these. Furthermore, nobody knows exactly how insulin works. It causes motor restlessness followed by coma as insulin reduces the blood sugar to an almost fatal minimum. Then, at a precise moment, glucose is quickly administered and lo! the patient returns to life and sometimes to sanity. Of late it has been found that insulin can be given in small doses over a period of several weeks, causing no convulsions or comas and with about the same results.

The second largest group of mentally disordered patients belong to the class of manic depressives who are emotionally unstable and swing often—very suddenly—from the deepest chasms of depression to the highest peaks of gaiety. Both of these forms of psychoses are considered functional in character and no brain pathology is found to accompany these diseases.

It has been my experience to have witnessed the results of shock treatment in a number of cases wherein patients were entirely out of mental contact preceding treatment. In many of these cases the patients were so completely out of contact as to refuse to eat, could not be induced to answer simple questions, nor could their interests be aroused in any way. After a course of shock treatments had been instituted, we have had the pleasure of seeing these same patients so greatly improved as to be able to carry on intelligent conversations and, in some instances, to have been sent home on parole.

It is the custom to use these methods of treatment in rotation. For example, if a group of patients have received metrazol therapy, completing a full course of treatments, those that are not recovered will probably be assigned for a course of insulin, after which, those not recovered will, in all probability, be given fever therapy by typhoid inoculation.

In closing we desire to stress the point that in this modern day every patient is expected to receive some form of therapy where possible, rather than depend on spontaneous remissions.

AN INSTANCE OF HYPERTENSION APPARENTLY DUE TO THE TAKING OF CREOSOTE FOR A PERIOD OF NINE YEARS

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This patient had been taking creosote for chronic bronchitis for a period of nine years. Although she was occasionally seen by a physician, the taking of the creosote was for the most part an instance of self-medication. With treatment there was a moderate fall in the blood pressure, but on further taking of creosote there was a marked rise in the blood pressure.

Mrs. M. O., 52 years of age, of good habits, was first seen in Sept. 1935, when she complained of weakness, lightness in the head and drowsiness; she could sleep all day and all night with no effort. There was a heavy feeling in the lower sternum on exertion. The previous year she had pneumonia, and a doctor told her she had high blood pressure. She had been troubled with bronchitis and constipation for several years, and had taken creosote for the bronchitis for nine years, with relief. Twenty years previously she had similar substernal distress which was diagnosed as cholecystitis, but at operation the gallbladder was found to be normal and was not removed. She had pneumonia as a child. Her father died of heart trouble at 71 and her mother at the same age with pneumonia.

The examination revealed a rather obese female with pale skin. There was bogginess under the eyes. The heart diameter was slightly enlarged to percussion, and

there were no murmurs or irregularities. There were a few coarse rales in the left posterior base. The blood pressure was 206 systolic and 140 diastolic, and her weight 157½ pounds. There was some slurring in her speech. The Volhard concentration test ranged from 1003 to 1033. An x-ray of the chest was done by another physician, and she was told that her bronchial tubes were dilated. The eyegrounds showed no hemorrhages or exudates, but the retinal arteries were extremely narrow. Treatment was carried out with calcium, viscysate, phenobarbital and a low salt diet to favor drainage.

Oct. 15. She was feeling somewhat better; her speech was a little clearer, and she was less drowsy. The blood pressure was 182 systolic and 122 diastolic. Her weight had fallen five pounds.

Oct. 29: The feeling in her head was much improved and the epigastric distress was less. Rales were still present in the left chest.

Nov. 6: The blood pressure was 190 systolic and 125 diastolic. The treatment was changed to the use of vaccine injections to clear up the bronchitis, and creosote was given by mouth.

Nov. 12: The blood pressure was 205 over 120.

Nov. 16: The blood pressure was 230 over 130.

Nov. 21: The blood pressure was 215 over 124.

Nov. 29: The blood pressure was 235 over 130. She had not been feeling so well of late, but her chest was clear of rales. Her weight was 147½ pounds.

This patient was contacted again in March 1938 and was getting along fairly well. Her blood pressure was not determined.

COMMENT

The effects of the antiretention therapy are brought out in this case by the loss in weight, temporary fall in blood pressure and the clearing up of the mental symptoms. The subsequent rise in the blood pressure coincided with the taking of creosote and tends to confirm the belief that the hypertension may have been due to the taking of creosote in the first place. Although she had been examined by several physicians in the past 12 years her hypertension was not discovered until a few years ago. This could be taken to mean that the early phase of her illness was not featured by hypertension, which probably came on after the taking of the creosote.

1352 East 55th Street.

"What beautiful scallops you have made on the pies, Mandy! How do you do it?"

"Ah's glad you like dem, Mam. Ah just used mah false teeth to make de impresses."—*The Abbey Chronicle (St. Benedict, La.)*

PSYCHIC IMPOTENCE

EDWIN W. HIRSCH, M. S., M. D.

CHICAGO

The subject of psychic impotence now claims the attention of physicians more than ever before. Increased interest in this subject is due to the fact that physicians whether they be general practitioners, internists, dermatologists, oculists, urologists or sexologists, are cognizant of the important part played by the sex factor in the daily life of the average individual.

Formerly, practically all cases of sexual impotence were supposedly due to a definite lesion either in the generative organ, in the associated structures, or in some distant part of the body which either directly or indirectly influenced the activity of the sexual parts. About 90% of sexual impotence was regarded as being due to organic causes while only ten per cent of the impotence cases were classified as psychic or nervous impotence.

Today, the attitude of the modern physician is the reverse of what it was yesterday. Now ten per cent of all cases of sexual inadequacy are considered as being due to a distinct body ailment while the overwhelming majority are looked upon as the consequences of a derangement of the emotional system. How can we explain the present high incidence of psychic impotence? Why do we now so seldom see a case of organic impotence?

In the old days, when a man suffered with psychic sexual impotence, he was told that he had nervous or imaginary impotence. Such cases were classified as instances of false impotence and the profession believed that these persons deserved little if any consideration. Physicians only devoted their scientific attention to true impotence which usually consisted of some lesion within the sexual parts. Men with psychic impotence were looked upon as border line psychoses and were usually told to forget about their troubles.

To the remarkable advances made in sexual psychology we are indebted for the progress made in our attitude toward people suffering with a disordered vita sexualis. Intelligent physicians know that there are a large number of body ailments which are the consequence of inadequate expression of the libido. Each day in the evolution of medicine we see more clearly

the important part the mind plays in the development of symptoms, and which so often mislead physicians into thinking that some organ of the body is not functioning properly.

One of the grave errors made by the old school of sexologists is that sexual impotence was considered as a disease entity and not as a symptom. Another mistake was that all cases, regardless of age, severity or duration of the disorder were treated alike. Unfortunately this fallacy to some extent has been perpetuated. The man of seventy with deficient sexual power, and the robust, young fellow of twenty-one suffering from fright were often treated alike. If a young male suffered from the inability to exercise his sexual function properly, he was labeled as a case of impotency and treated with tonics, sexual rests and, in some instances with an aphrodisiac.

Before the days of Freud, Robinson, Hall, Stekel, Adler, et al., the subject of psychic impotency was considered as being just beyond the realm of respectability. This point is particularly emphasized by Menninger in his recent book, "Man Against Himself." Menninger calls attention to the interesting fact that Osler in his text-book on medicine refers to impotence in only three places and nowhere to frigidity. Surely, the medical student after reading Osler would not think that psychic sexual disorders play much part in the everyday complaints of man. Yet they do.

By tracing the way in which the medical profession has handled the subject of impotence over a hundred years, we can understand why patients suffering with impotency have fared so poorly. Before the days of Virchow and cellular pathology impotency was recognized as being due to such causes as masturbation, sexual excess, nervous instability, venereal disease, perversion and other similar group disorders. Most complainants were given a prescription containing a bromide. Some were sent to sanitoriums, others were advised to do hard work. In most instances the patients were told that perfect health was compatible with sexual continence and, besides, the whole sex problem was in the head and that difficulty could be solved by forgetting about it. Patients often consoled themselves with the idea that someday someone would find the fountain of youth and then the matter of sexual inadequacy would be easily solved.

The next forward step in medicine was due to the studies of Virchow who showed that the cells of a diseased organ underwent changes. When a patient died of a disease it was shown by microscopic examination that the various organs which were affected by the disease were definitely altered. One could look at a piece of lung or kidney tissue under the microscope and tell what lesion of these structures existed during life and what part they played in undermining the patient's health. Physicians no longer were content to hear of symptoms; they wanted to see with their eyes what was wrong with the various body tissues. Virchow formulated the idea that the symptoms of which the patient complained were due to changes in the cells of the affected organ. Physicians now associated symptoms with visible changes in the various structures of the body.

Next, instruments were devised to examine visibly the changes in the various passages of the body. Instruments with polished lenses were perfected for examining the eye, ear, nose and throat. Then a long tube was devised for looking into the urethra and the bladder. Medical progress now moved ahead by leaps and bounds. There was one exception to this progression. Though patients who complained that their sexual power was weak were treated with electrically lighted instruments, the results were little better than before the days of organ inspection.

Why did the school of sexology fail to evolve appreciably? Why did the use of instruments fail to remedy many cases of impotency? Because the sexual function is different from all other functions in the body. If any individual has pus within the middle ear the effect is noticeable on the ear drum. This can be readily observed with an auroscope. Then by proper evacuation of pus or release of the tension, the patient recovers. A man with an inflamed prostate or veru may complain of impotence. By applying a substance to the inflamed prostate or veru there is no assurance that the patient will have adequate sex power. There is this vital difference between the sexual function and all other functions of the body: the sexual proclivities will not function unless the mind consciously and unconsciously wills

that the sexual parts perform properly. If the body says "yes" and the mind or psyche says "no" then a state of impotence will ensue. In other words no matter how normal the subject's outlook on life may seem, he cannot demonstrate his sexual prowess to his own and partner's satisfaction unless his mental attitude is free and unrestricted. In a word, he must be uninhibited.

Impotence demands frank consideration of the emotions, and the subject of emotion does not fit in very well with the bounds of urology. Sexual disorders are treated by urologists as a step-child: ownership is acknowledged but exhuberant interest is not displayed. The more urologists have become aware that impotence was essentially a psychic disorder, the more a consideration of impotence in urological texts has been shunned. As long as impotence was classifiable into a long list of lesions which represented definite pathological states, all was well. But if the pain in the urethra was due to a phobia or fixation then it ceased to be of scientific consideration.

Medicine advances despite the archaic teaching that function depends upon structure and nothing else. By experiment and clinical tests it has been demonstrated that the involuntary nervous system plays a tremendous rôle in the daily life of man. We now recognize that spasms of the pylorus, larynx and bladder neck may produce symptoms that simulate organic lesions. Also, spasms of the arteries to the penis may prevent blood from entering the part and thus preclude organ turgidity. Impotence therefore may be due to factors about which the sufferer is totally unaware.

One reason why the treatment of impotence has remained at a low level is because laymen as well as physicians like to consider sexual activity from the mechanistic viewpoint. It is very much easier to talk about the sex when one thinks of the sexual apparatus as a piece of machinery. Patients, as a rule, prefer submitting to mechanical treatment because it indicates to them that some part of their sexual mechanism needs adjusting. Another advantage of this form of treatment is that it necessitates but little outlay of time and causes the patient little inconvenience. Treatment of impotence by mechanical measures spares the patient much embarrassment because he does not have to reveal his true inner self. The sphere of private thought is not invaded; there is no undressing of the soul and the patient's mighty fortress of sex repression is not assaulted.

One may ask: If psychic impotence is so common why are not more cases reported in the literature? Why is there so little information on this subject in our text-books? Even in scientific circles there still exists a veritable tabu on this important subject. It seems that the airing of such matters is a touchy subject. Few men have the skill, audacity and acumen to probe into the deeper layers of the mind and to present the results of their research. Many physicians who sense that there is something wrong in the sexual life of the patient often meet with rebuff because they give the patient the impression that they are impertinently curious. Investigation of the patient's sexual life must be done in an inoffensive manner.

In the handling of psychic impotence the physician must be cautious about accepting the patient's own diagnosis. Often patients will come to the physician and say that they are suffering with impotence because they suffered a single sexual mishap. In all too many instances physicians believe patients without any hesitancy. The physician who has had experience in this field does not accept the patient's self estimate, but makes a survey of his own and arrives at the diagnosis by careful questioning.

My experience has taught me that one must be slow to accept statements of the following type as valid: "My lost manhood is due to that awful infection of gonorrhea which I had a year or two ago." Patients like to blame their sexual timidity on a disease rather than believe that their lack of efficiency is due to a state of fear. Men very much dislike the thought that their inability to fulfill a body desire is caused by the interference of an invisible agent.

Usually, when a patient consults a physician because of a sexual deficiency, he receives some medication to fortify his ebbing strength. After the gamut of aphrodisiacs has been run and the physician's patience has been exhausted by the patient's never-ending series of complaints, the patient departs no better and no wiser to seek help from some other source.

Psychic impotence represents an organic state due to a psychic cause. The sexual part is the place where physiology and psychology

meet. It is the site where body and mind blend. The sexual function represents the power of mind over matter. If the mind is opposed to a particular sexual union, the subject is powerless to assert his body urge. There must be accord in sexual union between mind and body or else a state of psychic impotence is likely to, and usually does, result.

If the mind plays such an active part in the sexual life why is not more done by psychologically-minded physicians to help that vast army of psychic impotents? The obstacles are many and complex. First, few physicians have studied the problems incident to this phase of medicine. Secondly, most patients do not understand the part that psychology plays in medicine. The average individual resents the prescriptions of the psychotherapist. All the rules and regulations laid down for the patient with psychic impotence seem odd when compared to the drug or instrumental therapy of regular medicine. The psychic impotent is taught to change his mode of thinking, his attitude toward life, toward his fellow man and woman. Psychic impotents are made to realize that they are social creatures. Sociological measures are among the remedial agents and while, seemingly, not scientific they are founded upon psychological laws. What counts most is that they work.

One of the great difficulties in discussing sexual neurosis is that the subject is an elusive one. Likes and dislikes, memories and impressions, instincts and similar matters are discussed. All this seems strange to people who expect the physician to treat them along regular medical lines. The study of psychic impotence is a study of human nature which as every one knows is very hard to understand.

Most men look upon the sexual organ as a "thing." In fact, many men and women refer to the sexual organ as "that thing." By "thing" they imply an appendage of the body which according to their way of thinking, should not be subject to the dictates of the mind. Most men feel that the sexual organ is independent of higher thought. The psychic impotent suffers from a cleavage of sex mentality and body sexuality.

On one hand the urologist beckons to the impotent with his ingenious armamentarium while on the other hand the psychologically-minded physician attempts to appeal to the patients intelligence. Who then should treat the psychic impotent? Or better, how best may the psychic impotent be cured?

To initiate recovery, it is essential that the subject's inner thought processes be searchingly analyzed. We seek to determine whether he is outwardly social and inwardly asocial. Does he, apparently, like people and secretly dislike them? Does the word "love" have any meaning for him?

Reduced to its fundamental, psychic impotence is a personality problem. We endeavor to see the life processes of the individual from the long range viewpoint. The restraint exercised by members of the family and especially the invisible influences which have thwarted the individual must be uncovered.

Psychic impotence may be looked upon as a form of mental colic. The mind cannot digest the impulses which enter it. Somewhere along the line of nerve communication an impulse is sidetracked. Improper contact means improper reaction with the result that mental indigestion ensues.

A very common cause of the mental unrest which tortures the sexual neurotic is the unpleasant ideas which certain words provoke. The factors which are responsible for "word agony" are not traceable by direct probing. It does little good to ask a man why he perspires when the word "masturbation" is mentioned. We do get an intelligent answer when the subject retells his life story, line by line; paragraph by paragraph; page by page and chapter by chapter.

In a word, psychic impotence is a disorientation within a restricted part of the subject's mental domain. It consists of improper reactions to persons and things. Certain impulses produce unpleasant effects because the "sexual devil" which was used to bully the patient when he was an adolescent is a myth which has been passed into his adult life.

While the peculiarities of the impotent are of interest and importance in determining what the conditioning factors were, which are responsible for the patient's plight, the physician is eager to know how this knowledge may be used to set the sexual derelict aright. It is essential that the subject be aware that he is maladjusted. Then he is ready to accept a plan which is more

likely to lead to success than the one he has followed.

There are no strict set of rules to ensure success. Each case must be handled as an individual problem. The patient is taught to pursue a course which meets his needs. Each of his fears must be fearlessly recognized and handled, not by a negative process of evasion, but by positive measures which pit fact against fact.

Sexual impotents weary most physicians because the time factor stares the physician in the face. Treatment can not be undertaken on the usual office visit basis. The physician must listen to the patient's endless drivel until he catches a sufficient number of important "finds." To be sure, the patient will repeat himself many times and apparently there is much wastage of time. At last, however, the physician is rewarded for his endurance, and there comes to light the thoughts which have harrassed the patient and made him a prisoner rather than a free agent of his mentality.

Business men who have occupied executive positions are often quite recalcitrant. It takes quite a bit of maneuvering to get this type to talk freely. Often such men will initiate the conference by the facetious remark: "Well, I guess I need a gland operation," or something of that sort. They do not know how to present their case history. They will stress that part of their history which shows them up in the best light. At length, we get them to present the story of their intimate life and if the physician shows a spark of understanding, he will find that he has a subject willing to draw aside the curtains which have obscured his view of sexual life.

All psychic impotents must be first examined physically so that no organic factor will be overlooked. If the physical examination is negative and the patient admits that he has morning erections, then we can be almost certain that we are dealing with a case of psychic impotency.

Most cases of psychic impotence can be handled successfully within a reasonable period of time. Common sense measures prove most availing. The patient is not weighed down with scientific terms or abstract theories. We make the patient feel that he is not regarded as an abnormal person just because his sexual life is deficient. Once his abnormal fear of sex is removed, the subject quickly realizes that he is just as normal as his fellow man and can meet the demands of the sexual urge to his own as well as to his mate's satisfaction.

Summary

1. Psychic impotence is a very common disorder.
2. To handle this affection with sympathetic insight one must understand sexual psychology.
3. Excellent results are obtained in the vast majority of cases by use of proper measures.

185 North Wabash Avenue.

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NON-EPIDEMIC PAROTITIS

A Complication of Insulin Shock Therapy

J. W. Klapman, M.D.

CHICAGO

In the profound physiological changes induced by insulin shock therapy for schizophrenia considerable disturbance may occur in various organ systems apparently more or less distantly removed from the seat of pathology under treatment.

In inducing profound hypoglycemia and coma with insulin the effect on the sympathetic and autonomic nervous systems is well known. From evidence already gathered it would seem that stimulation of the sympathetic centers is of major importance in the treatment of schizophrenia. Singer[1] is of the opinion that schizophrenia is characterized by a deficiency in the autonomic system and particularly of its sympathetic division. Gellhorn[2] considers the principal therapeutic effect of the hypoglycemia to be due to the stimulation of sympathetic centers, and concludes that: "in the future treatment of schizophrenia will be guided by a definite physiologic theory and by experiments designed to find the most suitable and effective procedure for the excitation of the sympathetic centers."

In the autonomic mechanism is included the system of salivary glands, and their excitation is one of the principal manifestations of the hypoglycemic state. In coma induced by massive doses of insulin, salivation may be so profuse as to cause the drooling of copious quantities of saliva.

The salivary glands receive their nerve supply

from two general sources, the bulbar autonomics, or parasympathetics, and the thoracic autonomics, or sympathetic fibers. These fibers run a tortuous course through the cranial innervation—through such nerves as Jacobson's branch of the glossopharyngeal, or ninth nerve, the fifth cranial and seventh cranial; in their course these autonomic fibers make contact with the optic, superior cervical, gasserian and submavillary ganglia. Thus it is apparent that there are numerous connections with the cranial nerves. As to the functions of these nervous sources, although both carry secretory fibers, it has been found that while the parasympathetics contain vasodilator fibers, the sympathetics carry vasoconstrictor fibers.

With regard to the parotid it is to be noted that it is a compound tubular gland. Although its secretion is more serous and thin than the secretion of the sublingual and submaxillary, containing relatively little albumin, the parotid has a large duct (Stenson's) opening on the inner surface of the cheek opposite to the second upper molar.

It may be deduced, or supposed at any rate, that in the prolonged stimulation of the autonomic nervous system that occurs in insulin shock and coma, the hyperemia of the parotid and the other salivary glands is conducive to stasis of the secretion with possible partial retention. Moreover, Howell[3] has shown that experimentally, at least, when the stimulation of the chorda tympani is gradually increased, care being taken not to fatigue the gland, a change in the composition of the secretion occurs. This change consists of the increase of organic and solid contents of the secretion. Although not experimentally established in the case of the prolonged stimulation incidental to hypoglycemia and insulin shock, it is a result worth thinking about in connection with possible parotid stasis.

Case, L. H. Classification: Schizophrenia, hebephrenic type. History shows patient suffered from the usual childhood diseases, including mumps. She had previously had a course of metrazol treatment. She was given preliminary physical examination, glucose tolerance, basal metabolism tests, urinalysis, blood count, etc., etc. Insulin treatment was begun March 9, 1938 when she received 20 units. There were 28 treatments during which time patient had seven comas. The shock dose was 150 units. This was successively reduced until coma was produced with 110 units. Total dosage of insulin given was 2785 units. On April 10, 1938 patient was found to have an elevation of temperature, and was not given insulin, but treatment was resumed the next day, April 11, 1938, when the temperature was found to be normal and patient had no complaint.

However, on the afternoon of April 11, 1938 the temperature began to rise again, and by 4 P. M. was 102.2 F. At 8 P. M., the temperature was 103.2 F, and patient began to complain of sore throat and difficulty in swallowing. She became restless, and by noon of the following day there was marked swelling of right side of the face and neck. The swallowing complaint and pain in the throat were undoubtedly due to the pressure from a hard, inflamed, and congested parotid gland; it disappeared in a day or two although the patient continued to run a febrile course and showed a markedly swollen parotid gland. At this point physical examination was negative and patient showed only swelling of the right parotid, continued febrile course and leucocytosis. White blood count was 24,000, R. B. C. 3,900,000, 85 per cent. hb. Urinalysis negative. Patient continued to run a febrile course with temperature remaining about 101 F. until about April 23, 1938. The swelling and tenderness in right parotid gradually became less, until about a week after the disappearance of the fever when it had completely subsided.

Throughout the insulin shock treatment, except when in coma, patient exhibited great restlessness. She was particularly subject to marked twitching of the facial muscles. Because of the nervous connections of the parasymapthetic and sympathetic fibers supplying the salivary glands, with the cranial innervation and several of the ganglia, especially the fifth and seventh cranial nerves, it may be possible to think of the circumoral twitching as reflex stimulation, and to believe that such spasms indicate considerable activity in the salivary glands.

Patient usually had a marked period of excitement before passing into coma, requiring the assistance of two or three nurses. As a consequence it required relatively large doses of insulin, and only when luminal (gr. 1ss) was given could the shock dose be reduced. During the stage of excitement, and especially while in coma, patient secreted copious quantities of saliva and showed persistent tendency to protrude the tongue.

Patient began to show circumoral twitchings on March 17, on the eighth day of her insulin shock treatment, and this became even more pronounced later.

Date	4 a.m.	7:30 a.m.	8:30 a.m.	9:30	10:30	12:00	8 p.m.	12:00
April 7.....	99.6	97.2	96.4	95.6	...	97.6	98.6	98
April 8.....	REST DAY							
April 9.....	98	98	97.2	96.4	97	99.4	101.4	99.4
April 10—Treatment discontinued because of elevation of temperature. With normal temperature following day, treatment resumed.								
April 11.....	97.2	97.4	97	96.4	97	99.6	103.2	103.6
Insulin shock therapy discontinued because of elevation of temperature, which was continuous for next ten days, patient developing parotitis.								

Table 3.

APRIL 7:

Insulin administered: 120 units, luminal (gr. 1ss) 6 A. M.

7:30 Lying quietly in bed, dozing.

8:00 Generally quiet and cooperative. Wide awake.

8:30 Peri-oral twitchings. Fine tremor of hands.

9:00 Naisy, restless, resistive. Increased salivation. Numerous facial twitchings. Coma (9:15).

9:30 Sterterous respiration. Markedly increased perspiration.

9:45 Given 300 grams succrose per nasal tube.

APRIL 9:

Insulin 120 units, luminal (gr. 1ss) 6 A. M.

7:30 Lying quietly in bed. Awake. Cooperative.

8:00 Somnolent, but easily roused. Quiet and cooperative.

8:30 Somnolent, but can be roused. Fine tremor of hands.

9:00 Grimacing. Sucking movements of lips. Tongue protruding. Restless.

9:20 Markedly increased salivation. Profuse perspiration. Noisy respiration. Coma.

9:50 300 grams of succrose given by gavage.

APRIL 11:

Insulin 110 units, luminal (gr. 1ss) given 6 A. M.

7:30 Somnolent.

8:00 Somnolent but can be easily roused. Loud respiration.

8:30 Sleeping; snoring. Can be roused.

9:00 Sleeping. Increased perspiration.

9:25 Marked facial twitchings. Coma.

9:30 Facial twitching. Markedly increased salivation. Noisy respiration.

10:25 300 grams succrose given by gavage.

THERAPEUTIC CONSIDERATIONS

If these postulates are theoretically sound, the treatment of dementia praecox should consist of the most suitable stimulation of sympathetic centers, but a minimum of biproducts, such as profuse salivation. The means at hand for controlling salivation are not numerous.

1. Elevation of the head during coma may conceivably aid in preventing salivary stasis, but is conducive to aspiration pneumonia.

2. As a preventive measure some suction apparatus should prove useful.

3. Atropine, which would control salivation, cannot be used. Although salivation may be thus controlled perspiration is likewise reduced, and with it the danger of producing condition of so-called "dry shock."

4. Before patients are given insulin shock therapy special attention should be paid to oral hygiene, e.g., removal of infected roots, elimination of carious cavities and treatment of existing pyorrhea or gingivitis.

5. The use of antiseptic mouthwash and gargle during treatment would seem highly advisable.

6500 Irving Park Road.

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2. Gellhorn; J.A.M.A. 110: 1434, 1938.

3. Howell: Text-book of Physiology.

PHYSICIANS AND THE SOCIAL SECURITY ACT

A recent ruling by the Bureau of Internal Revenue may tend to clarify to some extent the applicability to physicians of the taxing provisions of the Social Security Act. The ruling was made in response to an inquiry submitted to the federal bureau which embodied these facts: A physician was paid a regular monthly salary by a coal company to render medical services to employees of the company in cases in which the company was in any way responsible for the health of the employees. This physician engaged generally in private practice but was required by his contract to be available at all times and to give preference to employees of the company. In addition to paying the physician for his services, the company furnished all medicines and dressings and paid all necessary expense of hospitalization. In holding that this physician was not an employee of the coal company within the meaning of title VIII of the Social Security Act, imposing taxes with respect to employment on employers and employees, and of title IX of the act, imposing taxes on employers of eight or more persons, the bureau said:

"Under article 3, regulations 91, and article 205, regulations 90, relating to titles VIII and IX, respectively, physicians, lawyers, dentists, veterinarians, contractors, subcontractors, public stenographers, auctioneers and others who follow an independent trade, business or profession, in which they offer their services to the public, are generally independent contractors and not employees. However, this is not to say that such persons are in all situations to be classified as independent contractors as distinguished from employees for the purpose of the taxing provisions of the Social Security Act. The tests for determining whether one is an employee are set forth in articles 3 and 205, supra, and if such individual is subject to the necessary control, then he is an employee regardless of the fact that he is a physician, lawyer, dentist or other professional man.

"In S. S. T. 86 (C. B. 1937 1, 462) it was held that an attorney engaged by the M. Corporation and paid a retainer fee to defend it in any suit that may be brought against it during the year is not an employee of that corporation for the purpose of title IX of the Social Security Act. That conclusion is also applicable under title VIII of the act.

"In the present case, the physician is paid a regular monthly salary, which is in effect a fee to retain his services to treat employees of the company in accordance with the verbal contract. It is the opinion of

the Bureau that M. Coal Company does not have the right to exercise sufficient control over the manner and means in which the physician performs his duties to establish the relationship of employer and employee. The fact that the company furnishes all medicines and dressings and pays the expenses of local hospitalization when necessary is not determinative in this case. It is, accordingly, held that the physician engaged in performing services under the stated circumstances is not an employee of the M. Coal Company within the meaning of titles VIII and IX of the Social Security Act" (*S. S. T.* 240; *C. B. XVI-2*, 52-11).

—*J. A. M. A. Bureau of Legal Medicine.*

MORE DRUGS FOR INSURED GERMANS

Purchases by the krankenkassen are said to account for 80 per cent of Germany's domestic business in medicinal and pharmaceutical products, according to a report from the American Consulate General, Frankfort-on-Main. Such purchases amounted to 143,600,000 marks in 1937, which compares with 137,716,000 marks in 1936 and 151,584,000 during the preceding year.

The krankenkassen had an average membership of 20,200,000 persons, not including family dependents of members who are also covered, during the first three quarters of 1937, against 19,400,000 in the corresponding months of the preceding year. That the increase in medicinal purchases recorded by this agency did not result solely from larger membership is indicated by the fact that the average expenditure per person increased from 5.08 marks in the 1936 period to 5.19 in 1937, the report points out.

Marriages

Albert Henry Andrews Jr., Chicago, to Miss Jane Olson of Oak Park, Ill., June 25.

John William Ballou, Rushville, Ill., to Miss Marijane Corya in Denver, July 9.

Zachary A. Blier to Miss Evelyn Nauman, both of Chicago, July 7.

Clifford Herbert Brush to Miss Mary Moffit, both of Chicago, June 25.

Kenneth Franklin Hughes, Irving, Ill., to Miss Edna Doris of Mattoon, Ill., June 14.

Oscar Mandel Plotkin, Chicago, to Miss Evelyn Sylvia Horowitz of Pensacola, Fla., in Houston, Texas, February 6.

Personals

Alumni of Northwestern University voted a merit award to Dr. Frank A. Norris, Jacksonville, at the annual reunion recently.

Dr. Albert J. Roberts, Ottawa, has resigned as medical director of the La Salle County Tuberculosis Sanatorium, a position he had held since the institution was founded in 1919.

Dr. Carlo S. Scuderi, Chicago, addressed the Marion County Medical Society July 28 on "Modern Concept of Fractures of the Neck of the Femur."

Dr. Charles H. Best, professor of Physiology, University of Toronto Faculty of Medicine, will address a joint meeting of the Institute of Medicine of Chicago with the Chicago Society of Internal Medicine October 28 at the Palmer House. His subject will be "Heparin and Thrombosis."

Howard J. Shaughnessy, Ph.D., for the past year associate professor of bacteriology and public health at the University of Colorado School of Medicine, Denver, is again director of laboratories of the state department of health. Dr. Shaughnessy held the position from 1930 to 1937, when he went to Denver.

Dr. Wendall C. Kelly, Princeton, has been appointed state director for venereal disease control, effective July 1. Dr. Kelly has been in charge of a state health center in Princeton for Gibson, Posey, Pike and Warrick counties, where he will be succeeded by Dr. Wallace E. Childs, Madison. He graduated at Indiana University School of Medicine, Indianapolis, in 1936.

Dr. John Bellows, instructor in ophthalmology, Northwestern University Medical School, has been awarded the medal in ophthalmology of the University of Buffalo for his paper entitled "Biochemical Studies on the Crystalline Lens." The medal is given "for outstanding work in ophthalmology." Dr. Bellows graduated at the University of Illinois College of Medicine in 1930.

News Notes

—The Chicago Surgical Society announces the establishment of an annual prize of $250 to be awarded to some young physician devoting himself to surgery in Chicago, who is not a member of the Chicago Surgical Society, for meritorious work in one or both of the fields of experimental and clinical surgery. Manuscripts for this year's award should be submitted to the secretary of the society, 54 East Erie Street, not later than March 1, 1939. The committee on selection reserves the right not to award the prize if work of merit is not submitted.

—The state department of health reports that eleven cases of Rocky Mountain spotted fever

have been reported in Illinois so far this year against a total of eighteen cases reported in all previous years. Of the total this year one infection was known to have been imported, four were traced definitely to native tick bites and the remainder are believed to have been caused by native ticks. Four occurred in Johnson County and one each in Clay, Hamilton, Henry, McLean, Marshall, Morgan and Winnebago counties.

—Brig. Gen. Manus McCloskey, U. S. Army, retired, has been appointed warden of Cook County Hospital, succeeding Mr. Michael Zimmer, resigned. General McCloskey is a native of Pittsburgh, 64 years of age, a graduate of the U. S. Military Academy, Army School of the Line, and Army Staff College. After many years of army service in the Philippines, China, France and the United States he became commandant at Fort Sheridan, near Chicago, Ill., in 1930, and last April was retired. He has received the Distinguished Service Medal and the Croix de Guerre.

—The main building of the Chicago Lying-In Hospital group on the Midway will in the future be known as the Joseph B. De Lee Hospital in honor of its founder, in accordance with a recent change in contract merging the hospital with the University of Chicago. Since the merger with the university, the name of the hospital has become "The Chicago Lying-In Hospital of the University of Chicago." In addition to the main section of the building, named in honor of Dr. De Lee, there is the "Mothers' Aid Pavilion" for isolation cases and the "Max Epstein Clinic," the outpatient division. The university agreed in the contract to continue the operation of the Stock Yards Dispensary, 734 West Forty-Seventh Street, which was operated by the hospital, for five years and thereafter as long as it may be useful. The service to women is also to be continued. Property heretofore used for the work of the Chicago Maternity Center has been given to that organization by the hospital. Dr. De Lee founded the Chicago Lying-In Hospital in a tenement house in Maxwell Street in 1895. He is professor emeritus of obstetrics and gynecology at the university.

—Construction is expected to start late this year on a neuropsychiatric institute on the grounds of the Research and Educational Hospital, according to the state department of public welfare. The building will cost $1,250,000, of which $544,909 was supplied by a PWA grant. Present plans call for two towers of eight floors each to be connected by a two story unit. Fifty beds will be available for neurologic patients, while 100 will accommodate psychiatric patients. Arrangements have been made whereby the four medical schools in the city, Illinois, Northwestern, Chicago and Loyola, will have access to the psychiatric beds for teaching purposes. Twenty beds have been allotted to Dr. Paul L. Schroeder, director, Institute for Juvenile Research, for study and research. The neuropsychiatric institute will be administered by Dr. Major H. Worthington, director of Research and Educational Hospital; Drs. Harold Douglas Singer, professor of psychiatry, and Eric Oldberg, professor of neurology and neurological surgery, University of Illinois College of Medicine, will direct the psychiatric and neurologic divisions, respectively.

—The department of industrial medicine of Northwestern University Medical School will conduct its second annual symposium on occupational disease at Thorne Hall on the Chicago campus September 26-27. The speakers will include:

Dr. Carl M. Peterson, Secretary, Council on Industrial Health, American Medical Association, Industrial Disease Education.

Philip Drinker, Ch.E., professor of industrial hygiene, Harvard School of Public Health, Boston, The Scope of the Occupational Disease Research Problem.

Dr. Lewis J. Pollock, professor of nervous and mental diseases at Northwestern, Traumatic Neurosis.

Mr. Arthur H. Young, industrial relations counselor, The Place of Medical Service in Industrial Relations.

Dr. John G. Cunningham, Toronto, Canada, Industrial Plant Surveys.

Dr. Stanley J. Seeger, Milwaukee, chairman, Council on Industrial Health, American Medical Association, Industrial Health and Safety and the Practicing Physician.

Dr. Edgar V. Allen, Rochester, Minn.

Dr. James G. Carr, secretary and professor of medicine at Northwestern.

Dr. Irving S. Cutter, dean of the medical school, will be toastmaster at the banquet at the Blackstone Hotel in the evening and Mr. O. E.

Mount, American Steel Foundries, will speak on "Industrial Health—The Responsibility of Labor, Management and the Community."

Deaths

Cassius M. Craig, Champaign, Ill.; Medical College of Ohio, Cincinnati, 1882; aged 81; died, June 25, of bronchopneumonia.

Frank Fred Hoffmann, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1901; a Fellow, A. M. A.; on the staffs of the Illinois Masonic Hospital and the Norwegian-American Hospital; aged 59; died, June 22, of coronary occlusion.

William E. Krumsiek, Granite City, Ill.; Hahnemann Medical College and Hospital, Chicago, 1891; aged 78; died, May 24, of myocarditis and mitral stenosis.

Edward Walsh Lyons, Chicago; Northwestern University Medical School, Chicago, 1909; served during the World War; aged 52; died, May 19, of pulmonary tuberculosis and diabetes mellitus.

John Marten, Tolono, Ill.; Rush Medical College, Chicago, 1897; member of the Illinois State Medical Society; for many years president of the board of education; aged 80; died, June 7.

John William McConnell, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; member of the Illinois State Medical Society; on the staff of St. Anne's Hospital; aged 64; died, May 10, in the Sacred Heart Sanitarium, Milwaukee, of coronary thrombosis.

Charles Sylvester Mellen, Peoria, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; aged 58; died, May 25, of chronic myocarditis.

James Joseph Murphy, Paris, Ill.; University of Illinois College of Medicine, Chicago, 1936; a Fellow, A. M. A.; secretary of the Edgar County Medical Society; aged 26; was drowned, May 5, when his boat capsized.

Carl Matthias Pohl, Chicago; Rush Medical College, Chicago, 1903; a Fellow, A. M. A.; on the staff of the West Suburban Hospital, Oak Park, Ill.; aged 58; died, June 3, of cerebral hemorrhage.

John Lincoln Porter, Evanston, Ill., professor emeritus of orthopedic surgery at Northwestern University Medical School, Chicago; died, August 11, of coronary occlusion; aged 74. Dr. Porter was born in Alstead, N. H., July 2, 1864. He received the medical degree from Northwestern University Medical School in 1894. In 1900 he became professor of orthopedic surgery at the University of Illinois College of Medicine, where he served until 1917 when he became professor of orthopedic surgery at Northwestern. He was a member of the American Orthopedic Association, past president and for many years treasurer; member of the Western Surgical Association, the Clinical Orthopedic Society and the American Academy of Orthopedic Surgeons and fellow of the American College of Surgeons. The silver jubilee of the Clinical Orthopedic Society in October, 1937, was dedicated to Dr. Porter, who founded the society twenty-five years before, when it was known as the Central States Orthopedic Club. The John Lincoln Porter Memorial Lecture was established at the meeting. Dr. Porter was consulting orthopedic surgeon to the Evanston Hospital and St. Luke's Hospital, Chicago, and for many years attending orthopedic surgeon to the Cook County Hospital, Chicago. He was appointed a member of the advisory board of orthopedics during the World War and later was a major in the medical corps.

Samuel Radway, Chicago; Chicago Medical School, 1922; aged 45; died, May 27, of coronary thrombosis, chronic myocarditis and diabetes mellitus.

Peter Charles Schenkelberger, Chicago; Hahnemann Medical College and Hospital, Chicago, 1903; a Fellow, A. M. A.; aged 59; was killed, June 26, when he fell from a nine story window.

Henry Hulse Seibert, Davis, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; aged 70; died, May 1, in the Evangelical Hospital, Freeport, of heart disease and pneumonia.

James Williams Skebelsky, Chicago; Northwestern University Medical School, Chicago, 1907; a Fellow, A. M. A.; formerly clinical assistant in dermatology and later instructor at his alma mater; on the staffs of the South Shore and South Chicago hospitals; aged 56; died, June 1, of coronary thrombosis.

Wendell Stewart, East St. Louis, Ill.; Washington University School of Medicine, St. Louis., 1930; a Fellow A. M. A.; member of the Radiology Society of North America; on the staffs of the Christian Welfare Hospital and St. Mary's hospitals, East St. Louis, and St. Elizabeth's Hospital, Belleville; aged 34; died, June 6, in the Barnes Hospital, St. Louis, following an operation for removal of a brain tumor.

Arthur John Stuenkel, Hinsdale, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; member of the Illinois State Medical Society; on the staff of the Elmhurst (Ill.) Hospital; aged 57; died, June 4, of chronic myocarditis and coronary sclerosis.

Louis Max Turbin, Chicago; Chicago Homeopathic Medical College, 1891; aged 80; died, May 9, in the Ravenswood Hospital of injuries received when he was struck by a street car.

Henry Joseph Way, Chicago, M.B., University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1892; a Fellow, A. M. A.; M.D., Victoria University Medical Department, Coburg, Ont., 1892; served during the World War; on the staff of the Westside Hospital; aged 72; died, May 2, at his home in Oak Park, Ill.

William S. Williamson, Galesburg, Ill.; Jefferson Medical College, of Philadelphia, 1889; Civil War veteran; aged 91; died, May 20, of cerebral hemorrhage.

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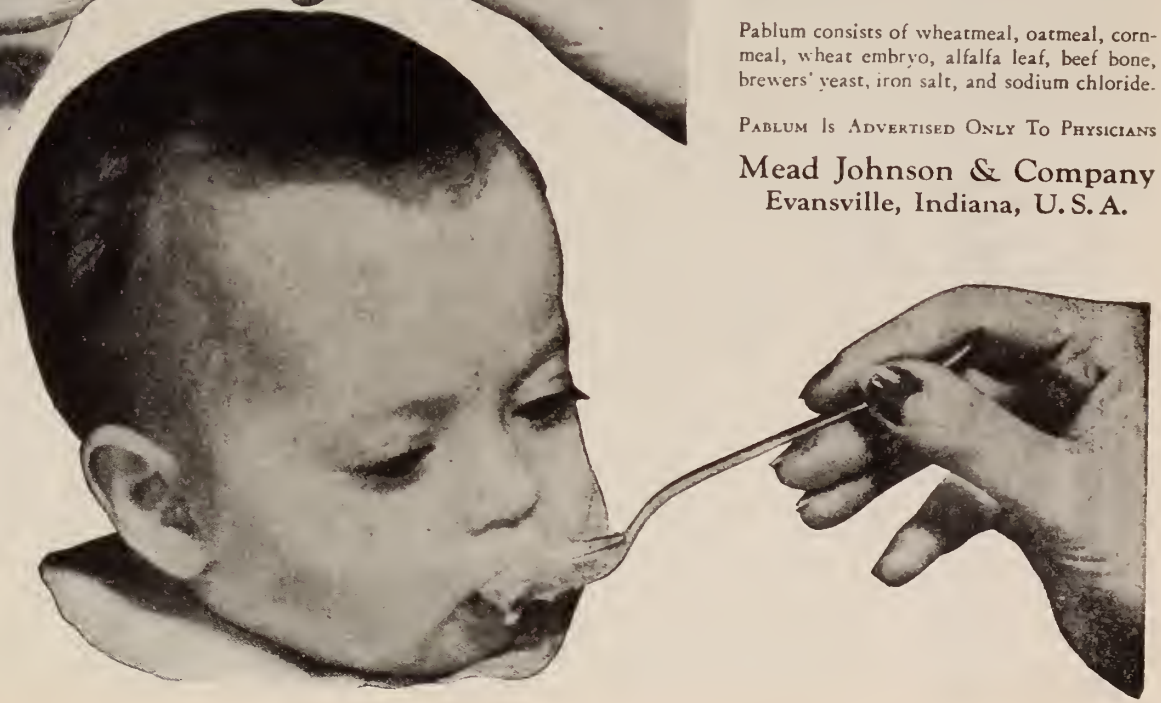
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Book Review

TRIUMPH OVER PAIN: By Rene Fulop-Miller. Translated by Eden and Cedar Paul. The Bobbs-Merrill Company. 1938. Price, $3.50.

The alleged significance of pain and the means used to dispel it or assuage it are critically considered in this work from the earliest days down to the present time.

ANUS — RECTUM — SIGMOID COLON. DIAGNOSIS AND TREATMENT. By Harry Ellicott Bacon, M. D. Introduction by W. Wayne Babcock, M. D. Forward by J. P. Lockhart—Mummery, F.R.C.S. 487 Illustrations. Philadelphia, Montreal and London. 1938. Price, $8.50.

This work is by all odds, the most practical and complete study of the Anus, Rectum, Sigmoid Colon ever published.

It is a text book which stands alone in the field because it covers every phase of the complex subject. A carefully prepared, selected bibliography completes each chapter.

Incorporated in this work are much new material and investigative work, supported by published reports of the authors.

OUTLINE OF ROENTGEN DIAGNOSIS. By Leo G. Rigler, M. D. 274 Illustrations shown in 227 figures, presented in drawings and reproductions of Roentgenograms. Philadelphia, London, Montreal, New York. J. B. Lippincott Company, 1938. Price, $6.50.

This volume is the atlas edition. There is also a student edition of this work, price $3.00. This work is an orientation in the basic principles of diagnosis by the Roentgen method. Unique drawings by Jean E. Hirsch, a plenteous supply of Roentgenograms, and Dr. Rigler's distinctive treatment of the whole subject makes a volume of great usefulness to every man in medicine.

Mrs. Henpecked (sarcastically): "I suppose you've been to see a sick friend—holding his hand all evening!"

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FATALITIES FOLLOWING INJECTION TREATMENT OF HERNIA

Clarence J. Berne, Los Angeles (*Journal A. M. A.*, May 28, 1938), reports two cases in which death was due to an injection made in the course of treatment for inguinal hernia. In the first case the acute process progressed from the time of injection, and in the second case after an initial syndrome suggesting severe irritation of the intestinal wall a quiescent period occurred, with a sudden acute progressive episode five days later, probably indicating the time of perforation. These cases constitute an indictment against the teaching that intraperitoneal injection is a harmless accident and establish that laparotomy may be necessary at any time, as an emergency procedure, on the appearance of symptoms and signs indicating a significant variation from the usual clinical course following intraperitoneal injection.

USE OF HELIUM IN ANESTHESIA

Urban H. Eversole, Boston (Journal A. M. A., March 19, 1938), used helium during the induction or the maintenance of anesthesia in 110 cases. In most instances it was used for the relief of various types of respiratory obstruction, such as postoperative tracheal edema, compression of the trachea by postoperative hemorrhage and ordinary laryngospasm. In addition, it has been used a few times as an aid to breathing for patients with partial respiratory paralysis caused by spinal anesthesia. At the Lahey Clinic the indications for the use of helium are relatively few, as evidenced by the comparatively small number of cases in which helium was used even though it has been attached to the gas machines for more than two years. Of all patients for whom helium was used for the relief of stridor or obstruction, 87.6 per cent obtained either complete or partial relief and 12.4 per cent did not obtain relief. There is certainly no substitute for a clear and unobstructed airway, and the use of helium is not suggested as a substitute for unobstructed breathing. It is thought, however, that in certain cases this gas has been of distinct value in helping out in an emergency until a tube could be inserted within the trachea. It has also been helpful on many occasions by permitting one to continue smoothly and safely the administration of an anesthetic without inserting an intratracheal tube when otherwise one would have been necessary. Fortunately the experience at the Lahey Clinic with helium as an aid to patients with partial respiratory paralysis has been very limited, but in the few cases it has been a distinct aid to respiration.

SODIUM THIOSULFATE AND ELIMINATION OF ARSENIC

Samuel Ayres, Jr. and Nelson Paul Anderson, Los Angeles (Journal A. M. A., March 19, 1938), made arsenic determinations on the urine of forty-nine patients with a variety of cutaneous disorders in whom arsenic was suspected of being a possible etiologic factor, the tests being made before and immediately after a single injection from an ampule of a stable solution of 10 cc. of 10 per cent sodium thiosulfate. Of these, 8 per cent failed to show any arsenic either before or after injection, 12 per cent showed a decrease in the ouput of arsenic after the injection and 80 per cent showed an increase in the excretion of arsenic; in some cases a hundred times as much was excreted at the second test as at the first test, and the increase was seldom less than tenfold. It may be noted that in some cases in which subsequent determinations were made during the course of administration of sodium thiosulfate there was a further increase in the excretion of arsenic and that in all such cases there was a gradual decline in excretion, probably indicating that arsenic which had been stored in the tissues had been eliminated. These are unselected cases and represent all of the cases investigated in this manner during the last four years.



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INTRA-ABDOMINAL CRYPTORCHIDISM TREATED WITH GONADOTROPIC SUBSTANCE

George B. Dorff, Brooklyn (*Journal A. M. A.*, May 28, 1938), treated twelve prepuberal boys, eleven presenting unilateral cryptorchidism and one presenting bilateral cryptorchidism, from 3 years and 4 months to 11 years and 8 months of age, for cryptorchidism with the gonadotropic principle from the urine of pregnant women. Doses in most cases were large and were given intensively over extended periods. Two of the boys showed no response and treatment was discontinued, and nine responded definitely as a result of the administration of varying amounts of the substance, so that finally testicles in the inguinal canal were palpated below the internal ring. The twelfth boy, while not showing such development, did show evidence of response after receiving 78,500 rat units of gonadotropic substances over a period of seven months, so that finally the presence of a mushy mass, suggestive of testicular formation, could be felt below the internal ring. Although complete scrotal descent and fixation is still lacking and testicles have at present reached only the inguinal canal (in case 12 the testicles are in the scrotum), the author's past experience with cases of inguinal cryptorchidism makes him feel that sufficient additional endocrine therapy in due time will probably produce complete descent and fixation in the scrotum in some of his cases of intra-abdominal cryptorchidism, just as it did in his cases of inguinal cryptorchridism. When impediments such as marked hydrocele accompanied intra-abdominal cryptorchidism and existed before treatment, as in case 11, endocrine therapy caused the intra-abdominal testicle to descend from the abdomen but it did not correct the hydrocele. The existing hypoplastic gonad and external genitals were developed through the use of gonadotropic substance to the point of apparent normality. The only seemingly adverse effect resultant from intensive treatment was the precocious production of suprapubic hair in some of the younger boys. Even with the possibility of producing precocious suprapubic hair, endocrine therapy should be instituted early in boys showing intra-abdominal cryptorchidism, because the response is much more readily attained and is much more successful in younger boys than in those boys who are approaching or who have passed the puberal age. Intensive endocrine therapy in all cases of intra-abdominal cryptorchidism should be attempted without waiting for spontaneous descent and before attempting surgical intervention; there is certainly less danger.

GONOCOCCIC MENINGITIS

Of 500 cultures sent to Sara E. Branham, Reginald H. Mitchell and William Brainin, Washington, D. C. (*Journal A. M. A.*, May 28, 1938), during the last two years to be typed as meningococci, ten (or 2 per cent.) have been found to be gonococci; one-half of these, or 1 per cent., have been from spinal fluid and the other 1 per cent. from blood. A complete detail of the history was not available in some of these cases, but it is definitely known that in five cases the meningeal or blood stream infection followed gonococcic infection of the genital tract. It is usually assumed that meningitis due to the gonococcus is secondary to gonococcic infection elsewhere. But in two of four patients who were observed by the authors, there was neither evidence nor history of other gonococcic manifestation obtainable. Both of these patients were young women—the gonococcus was considered a potential cause of primary meninigitis in the case cited and the other a nurse who had what seemed to be a primary gonococcic septicemia without meningeal involvement. It seems likely that gonococcic meningitis is much more common than it is usually supposed to be. Hospital laboratories are usually much too busy to carry the identification of the causative micro-organism to completion, and a gram-negative coccus of typical morphology which occurs intracellularly and extracellularly in the spinal fluid, and which is agglutinated by anti-meningococcus serum, is usually assumed to be a meningococcus. Even when the study is carried further, definite criteria for the identification of the gonoccoccus are not well established and its identification is not easy. An absolute criterion is lacking. Nevertheless, a careful study of cultures with consideration of all of their characteristics—type of growth, colony form, fermentation reactions, alkali solubility and serologic reactions—will make an experienced worker feel quite sure of the identity of the strain in question.

MYASTHENIA GRAVIS: CONSIDERATION OF RECENT ADVANCES AND INFLUENCE OF PREGNANCY

Harry Tabachnick, Milwaukee (Journal A. M. A., March 19, 1938), discusses the recent advances pertaining to etiology, treatment and diagnosis of myasthenia gravis. Interest in the undetermined etiologic role of the endocrines is further enhanced by the consideration of myasthenia gravis associated with pregnancy. In the case of myasthenia gravis cited myasthenic weakness had its onset after childbirth, and the myasthenic facies with exaggeration of symptoms was observed to set in during the early course of the next pregnancy. Myasthenic weakness may precede the myasthenic facies. Prostigmine is a valuable drug in both treatment and diagnosis of myasthenia gravis. It is suggested that prostigmine may be of aid in the diagnosis previous to the onset of the myasthenic facies; that is, when the malady is in what may be termed a stage of incipience. There is need for more determinate information on myasthenia gravis with pregnancy. An accumulation of data including use of the newer quantitative endocrine determinations is likely to assist in clarifying the possible relationship of the endocrines to the disease.

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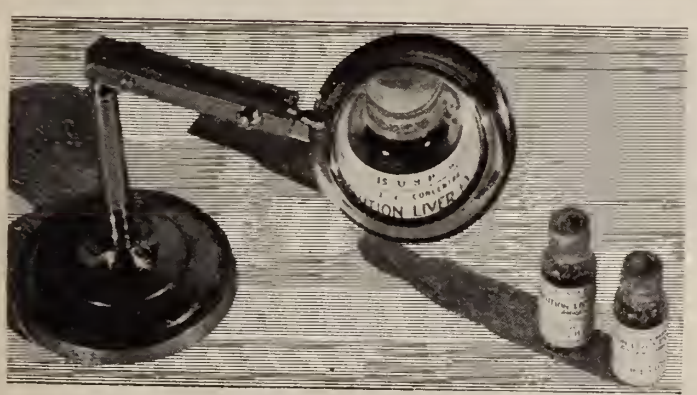
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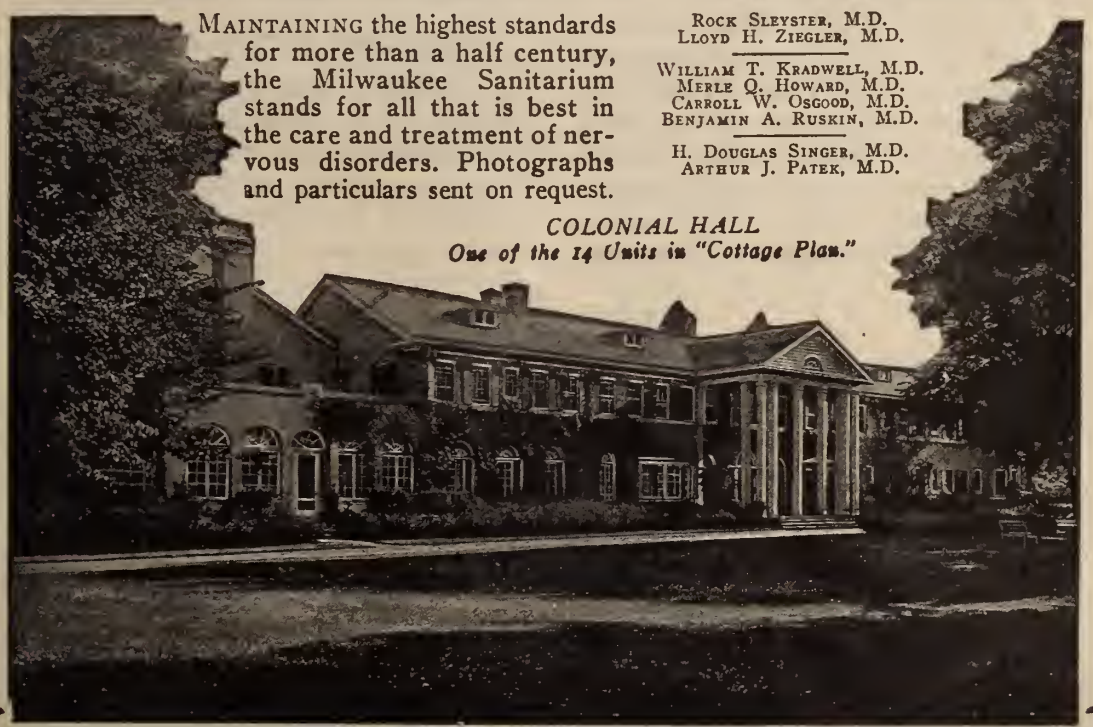
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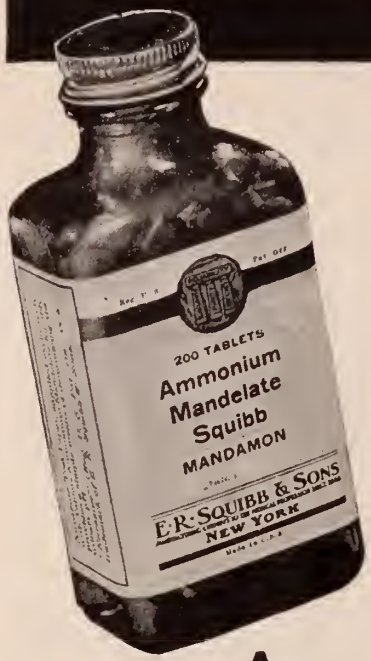
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RECENT ADVANCES IN THE SCIENCE OF NUTRITION

II. Newer Knowledge of the P-P Factor and the Control of Endemic Pellagra

● The years since 1932, when the P-P factor was known variously as vitamin B_2 or G, have been especially marked by contributions to our knowledge of the anti-pellagric vitamin. Considerable progress has also been made in the treatment of human pellagra as well as in the control of the disease. It might be of interest to review briefly a few of the outstanding developments in this field.

The P-P factor is now accepted as being closely related chemically to nicotinic acid if, indeed, it is not identical with that compound (1). Nicotinic acid has been used successfully in the treatment of human pellagra (2) and there is evidence to support the belief that the P-P factor is intimately associated with essential enzyme reactions in the body (3). A laboratory test has been devised for the early clinical detection of pellagra (4) and there is today better agreement as to the basic dietary requirements for the management of florid pellagra (1).

While the situation as regards endemic pellagra has, in general, shown improvement during recent years, an occasional report indicates that endemic pellagra still constitutes a major medical problem in some localities (5). Authorities agree that the old adage relating to an ounce of prevention being the equal of a pound of cure applies particularly well in the case of pellagra. Consequently, in specific regions of this country certain control measures have been advocated in an endeavor to bring this deficiency disease under permanent control. The most promising of these measures are the issuance of yeast rations and popular education to the desirability of home production of foods rich in the P-P factor, especially during late winter and early spring. The problem of permanent control of pellagra has been clearly and briefly defined as follows:

> "The prevention of endemic pellagra is simple in theory but difficult in practice. If every normal person received enough of the foods containing the pellagra-preventive vitamin there would be no endemic pellagra.—Permanent control can be obtained only by bringing about permanent changes in dietary habits" (1).

The correction of those long-standing dietary malpractices which are responsible for pellagra is certain to be brought about only slowly. The concerted and sustained efforts of all agencies concerned with public health will be required, not only to insure observance of the control measures described above, but also to educate the potential pellagrin to the necessity of a varied diet of protective foods.

Commercially, canned foods may play an important part in the current program designed to bring pellagra under control. Several hundred varieties of canned foods are readily available on every American market at all seasons of the year. Judicious inclusion in the diet of those foods known to be important carriers of the anti-pellagric factor (1) should materially assist in effecting permanent control of endemic pellagra in America.

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(1). 1938. J.A.M.A. 110, 1665.
(2). 1938. J.A.M.A. 111, 584.
1938. Ibid. 111, 613.
1938. Ibid. 110, 289.
(3). 1938. J.A.M.A. 111, 28.
(4). 1938. J. Med. Assn. State of Alabama. 8, 52.
(5). 1938. J. Med. Assn. State of Alabama. 7, 475.

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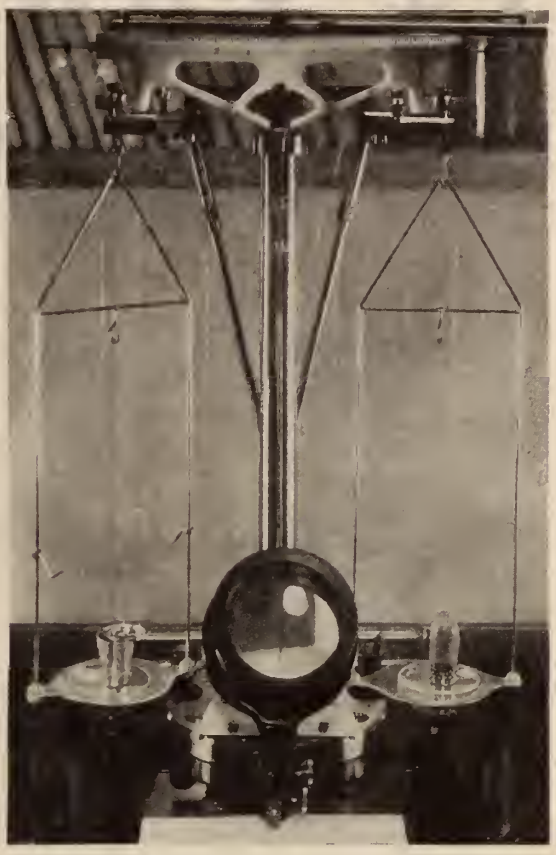
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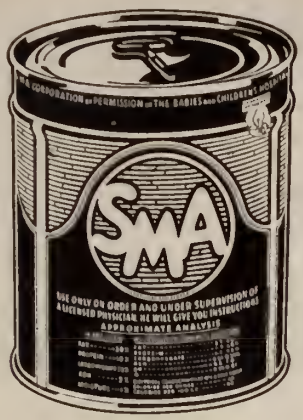
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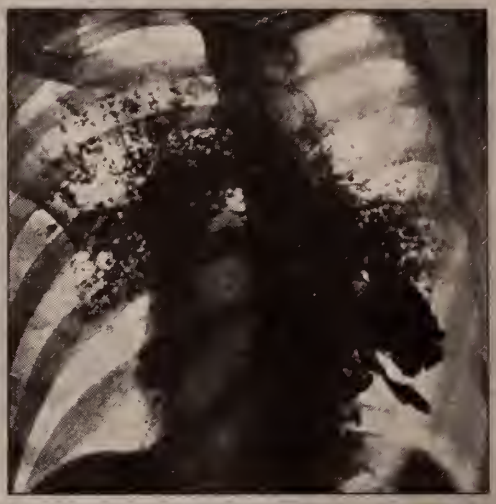


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THE OFFICIAL ORGAN OF

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VOL. 74 OAK PARK, ILL., OCTOBER, 1938 No. 4

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Editorials

HEALTH INSURANCE, NO MATTER HOW IT IS SOLD TO A NATION, DOES NOT PROTECT, NOR CONSERVE, NOR IMPROVE THE HEALTH OF THE PEOPLE

Social insurance or tax supported medical service in its many ramifications, but especially health insurance, is assuming in those countries that have borne it longest, every trait of poor Sindbad's devastating Old Man of the Sea. The thin, dying creature by the river who wanted only transpose across, once safely settled on the youth's back, began to grow to enormous proportions and to torture fiendishly its human steed.

Such is the history of health insurance in those countries, among others, Germany, Austria, England—where it has been in existence for decades and where it has become firmly established.

Germany was the first to sponsor the parasite. At that time Germany was in the lead in things medical.

German surgeons, German medicines, German clinics, German laboratory research there lay Mecca for the ambitious students or doctor over fifty years ago. About that time social or health insurance made its descent upon the back of the German people. Where, we ask, is the once bright future of German medicine today?

Behold it, a broken emasculated thing struggling to travel beneath its politically imposed "Old Man of the Sea." An Old Man of the Sea, too, is urging the United States to assume similar burdens in the form of health insurance and tax-supported medical service. That such persuasion comes from a political bureaucracy in no-wise minimize the danger. Social insurance was the red ribbon on the glass in which Bismarck, Tammany gone Royalist, threw a drugged sop to the ever burdened German workingman.

Health in the middle half of the nineteenth century was almost as much of a luxury as diamond necklaces. Fine medical care was kept for

princes or for those who won the bounty of the great lords. Bismarck, half fox, half lion and a diplomat worthy of the Vatican, cast about for "bread and circuses" for the Teutonic poor, and found it in promise of free medical and surgical and obstetrical care, for which the beneficiaries if they wished might donate a few assessments. The German, and especially the socialistic German, is always long on the assessment or mutual payment idea, even if it is an assessment in name only.

Now Germany and her English cousins have discovered that economic schemes born in times of plenty are sadly out of joint in the lean years. Take some recent figures from the German front.

Professor Winslow of Yale University is authority for the statement, that for sickness insurance alone the German laborer must set aside something more than eight per cent. of his income (8.5% to be exact) and that the employer for the same purpose adds five per cent more. Statistics in the United States claims that the average cost of medical care to the citizenry is something like three per cent. of the income. Undoubtedly Germany's other ten and five-tenths per cent. (10.5) is used for paying salaries and buying red tape for the tremendous political bureaucracy needed to handle the German social insurance system . . . the medical Old Man of the Sea. Not only cost but time lost from labor is excessive in Germany. Back in 1913 the German workman was accredited with 9.2 days of loss of labor for illness (with insurance) as against something over six per cent. time loss for the American worker. This ratio is practically the same in the United States today, *but in Germany it has increased to almost* 17%. The total number of days of sick benefits in Germany have increased two and one-third times since 1913; its cost of administration has almost trebled and it has become necessary to add a state subsidy as well as to decrease the time and amount of benefits in a ratio varying from 40 to 70%.

All of which, easily verified by authenticated statistics does not lay any ribbons on the brow of the practicality of health insurance as the German nation bears this burden.

Aside from this economic standpoint to industry, to labor and the state, look at the economic viewpoint of the medical profession. The panel doctor gets the patient after he has had two lay bookings with his soul and his body practically eviscerated on record books of the gossipy laity. The average panel doctor sees from 50 to 200 patients daily at a compensation of something like eight or ten cents per patient. The state furnishes bandages, medicines and the like and the results are a great deal like the bureaucratic nabob who during the recent World war, in spite of the fact that although "America had only 85,000 horses," according to Collier's Weekly, "some imaginative individual placed orders for 945,000 saddles; 1,000,000 horse covers; 1,500,000 halters; 2,000,000 feed bags, and 2,800,000 halters."

That's the sort of waste that happens under any government controlled undertaking when the politicians are at the fore, and there is sugar to be sprinkled about for its constituency. The doctors and the taxpayers in Germany have found that out.

Health insurance, no matter how it is sold to a nation, does not protect, nor conserve, nor improve the health of a nation. But it has been proven to shine like a morning star to guide the greedy politician to a fat pocketbook and easy jobs for himself and his kin, lo, to the fourth generation.

Health insurance by any name is one of those windbag Santa Clauses that may have been practical on Mount Parnassus but have no place in the economics of any sane, rational, self-respecting, self-supporting people. It is an elusive chimera, swallowed gaily by those misguided individuals to whom the "government," "state subsidy" and the like are the pot of gold at the end of the rainbow which made of every dolt a genius and of every sluggard a man of wealth and consequence. "It is natural for man to indulge in the illusions of hope," quoth the great Patrick Henry. For the poor man, and for the burden shifting rich one, it is natural to have faith in such straw mannikins as health and tax supported medicine.

That there should be some way of equalizing burdens of illness between the rich and the indigent without making the medical profession the buffer state is to be admitted. But that way does not lie in so-called "health insurance" or tax-supported medical practice, which merely adds more taxes to a nation now so crippled by terrible taxes that industry can scarcely function and the private individual on every side has his

own private Old Man of the Sea dragging him down to inefficiency and despair.

The "Medical Annals of the District of Columbia" published somewhat recently excerpts from a brochure entitled "Will America Copy Germany's Mistakes," which was written and translated for the Pennsylvania Self-Insurers Association, Finance Building, Philadelphia. For this the author is Gustav Hartz, a seasoned and prominent labor leader in the land of Hitler and Nazis. Excerpts therefrom are as enlightening as they are appalling:

"It is not advisable to give ear to the biased experiences of advocates of social insurance who in many cases draw profits therefrom for there is no institution in the world that is so much extolled and the praise of which is so little justified as social insurance."

"To consider unemployment insurance an achievement of recent years, to call it the 'crown of social insurance' is a mistaken view for every social insurance is unemployment insurance whether the unemployment is due to illness, accident, early incapacity, old age or to being out of work."

"It may easily be proved that social insurance is not only caused by lack of means but even makes of it a social principle, aggravates it, spreads it, makes it permanent."

"Woe to the state which imagines that crises may be alleviated or stopped by the introduction or the existence of a comprehensive system of social insurance. . . Every economic crisis swallows up the best organized social insurance and consumes its funds at both ends—at the end of the diminishing premiums and at the end of the increasing benefits. In the time of her hardest social crisis, social insurance was Germany's greatest inner trouble."

"In Germany the most firmly convinced fanatics on social insurance—such people do still exist and in most cases they fare very well—are even now sure that unemployment insurance 'is not an insurance really.' In 1927 this 'Crown of social politics' was introduced, with fixed premiums and fixed benefits. Three or four years later nothing was left and all that remains of unemployment insurance today is its name. Now the welfare principle is applied for the unemployed; insurance allowance without examining the necessity, namely, with legal rights for six weeks only. Juveniles and working women have no legal claim.

"The period for which benefits are made must of course be limited, as with a subscription of 6½ per cent of their wages not all unemployed can be supported. The greater the number of unemployed, the lower the limit must be set. At first the allowances were made for 26 weeks, now for six weeks. As in this crisis, unemployment frequently lasts for years, and most of the unemployed no longer receive any allowance. The unemployed insurance at present scarcely supports one-third of the army of unemployed, while the other part is supported by the welfare and the crisis centers. The same was the case before social politics had their 'crown' put on. These institutions draw their funds from the State revenues."

"It is not in the least different with the sick insurance. The unevenness in the business level, the seasons, holiday, a change of work, failing health and many other things contribute to bring about a noticeable change in morbidity. Since the sick insurance has been in effect, the average number of days of incapacity to work owing to ill-health has risen from 5½ to 28 days, although health in general has considerably improved. In the strict sense of the word the sick insurance is no insurance either. From a technical and mathematical standpoint it is also quite unsettled in view of the moral hazard noted above.

"This is clearly seen when considering that the individual insurance case, whether due to illness or unemployment, can be willfully caused or extended. Where is the borderline between illness and health, between mere indisposition and illness, between dread of getting ill and bluff? And if the insured person is really ill, where is the borderline between ability or disability to work? How can the duration of an illness be fixed?

"Illness is the most incalculable risk in existence.

"Even the doctor is mostly, or at least frequently, unable to diagnose correctly and to distinguish pretenders and hypochondriacs from really sick people, or rather to tell whether a man is fit to work or not."

"Of all the risks in social insurance only old age, death, and number of dependents can be exactly established. These are, therefore, the

only cases in which an unobjectionable actuarial basis, and an unquestioned legal claim are possible. Everything else is hazy and uncontrollable."

"Dread of illness obsesses most people, and this has been pressed into a system "illness made easy," by which the will be to be well is strangled. The doctor is consulted a dozen times where once would be sufficient—the insurance pays. The prescribing of medicine, bandages, etc., is desired. When they have been obtained they lie about until they are no longer fit to be used and must be thrown away—the insurance pays. Besides, it is nice to get something in return for the premiums paid year in and year out. Excessive 'overdoctoring' is the result, and fear of illness shakes the will for recovery—the best aid to health. Pretenders and hypochondriacs are bred and the use of medicine becomes excessive. The advertising of certain remedies and cures created a medicine craze. A few years ago it was ascertained that four times as much money as used for doctors' fees and medicines for 35,000,000 of people in insurance as for 30,000,000 of uninsured. This was stimulated, unthinkingly by a desire to get sick money. An actual run on the sick insurance allowance set in.

"At first sight it seems improbable and paradoxical that a desire to obtain sick money that scarcely amount to half the sum of wages should arise. It appears impossible that someone should, unless compelled by illness, forfeit his wages to get an allowance of half the amount. Unfortunately life does not run a straight course between health, working ability, working possibilities on one hand, and illness and disability on the other, nor do people's minds and actions.

"In millions of cases, for example, when wages are being decreased, when work is scarce and work hours in consequence shortened, when there are fewer shifts, many holidays, work restrictions at certain seasons, outdoor work in frosty weather, 50 per cent. of the wages is welcome. One objects to the work he is given, another does not feel like working, a third's time is taken up by some family matter for which he would have to take leave of absence and forfeit his pay. In such cases the sick insurance comes in handy. Besides this, there is also deceitful trickery. Fictitious contracts are made, doctors are induced to prescribe medicine, and instead of the medicine, toilet soap and scent, etc., are handed out by the pharmacies.

"How can this possibly be done, some ask. Those who consult doctors are supposed to be ill. That is all very well if the doctors were always able to detect whether the statements of the patients were correct. Often a diagnosis is impossible. He who would like to prove this should go to ten doctors, complain of headache, pain in the limbs, rheumatism. All ten will start a treatment for headache or rheumatism, without discovering that nothing whatever is the matter with the patient.

"Besides that, all doctors are glad to get new patients, for do they not mean their livelihood?

"Medical science has become a cheap article, and doctors have given up conscientious treatment. The genuine patient is neglected, is not given the necessary care.

"The greater the mass consultations, the lower are the doctors' fees. The amounts paid to panel doctors for each single case are deplorable. They are, therefore, compelled to resort to mass practice.

"The sick insurance unrolls the entire prolem of the medical man's existence. Mass demand compelled a limitation in the use of medicines. Doctors must not prescribe what they consider good for the patient, they only being allowed to give remedies entered in a book of medical regulations for insurance purposes.

"The insured workman becomes a second class patient."

"The genuine patient is justly indignant to find that the existence of his illness is doubted, and that he who has always paid his premiums regularly and has a right to demand conscientious attendance, is considered a cheat.

"This system, together with the rest of the bureaucratic apparatus, has wedged itself between doctor and patient, completely destroying the patient's confidence in his physician, which greatly retards all recovery."

"In the beginning nobody thought of insuring all workmen, merely needy ones. But soon everybody was 'needy.' Today, with members of families included, two-thirds of the nation are compelled to be insured."

"Liberty and progress are possible only where the will to get on and to accumulate capital is not hindered, but furthered."

"During the last few years the administration costs amounted to 400 million marks annually.

The costs cannot be called too high and cannot possibly be materially reduced.

"However, the whole matter gets another aspect in view of the fact that these expenses are covered by workmen's premiums and are deducted year by year from the money intended for these men's support. In one worker's generation—say from the age of 20 to 60, or 40 years—it means the gigantic sum of 16,000,000,000 marks, which, therefore, is lost from the funds originally intended for sick, unemployment and old age insurances.

"An army of about 70,000 officials is required to handle part of the wages of the workers under compulsory administration, for what else is social insurance?"

"Premiums started on a modest basis. The first were 1½ per cent. for the employee and ¾ per cent. for the employer. Today, the entire premium averages almost one-fifth of the amount of the wages and for minors it is nearly 30 per cent. The involved way in which the contribntions are divided between employer and employee is omitted here, as an alteration is pending. It is expected that employer and employee will in future bear equal share, about 10 per cent. each. Is it to be expected that an employer can afford to make an employee a present of 10 per cent. in addition to his wages?"

"The only part of the wages he might be able to save in order to build up a capital is taken from him, thus preventing him having any resources of his own. Whether he wants to or not, he is doomed forever to remain a proletarian. It is social insurance, therefore, that makes needy people, in order to give them after they have become needy, very inadequate support. Social insurance originally was established to help those in distress. Now these are poor of its creation."

IS THERE A MALE CLIMACTERIC?

Opinions of medical men are found to be diametrically opposite in their views pertaining to a male climaeteric. The most of those who have given any attention to the subject, associate the term with rejuvenation or re-erotization. The subject is frankly displeasing to many, although much specious reasoning is advanced to persuade the skeptical that there is a male climacteric, and that it should receive more careful investigation of doctors. Despite this division in medical ranks there are numerous workers who believe that there is a period in the lives of men somewhat like the menopause in women. For example Ferguson[1] writes, "Evidence is accumulating, and opinion is becoming more concrete, towards the conception that in man there is a real climacteric, comparable in in its nature though not in its precision with the menopause in women." His opinion will be accepted with a greater degree of grace by those who are uncompromising in their attitude toward such a theory when they are told that he derides Voronoff in clear cut terms by saying, "Is not Voronoff's claim buttressed by the unsolicited testimonials of six hundred libidinous septuagenarians?"

Nearly all who have written about the male climacteric point to changes that take place in the prostate, among which are acute and chronic inflammation, atrophy and malignant growths. There appears to be a general unanimity of opinion pertaining to the frequent appearance of prostatic trouble in men when they begin to grow old. One must not lose sight of the fact that other serious ailments frequently declare themselves between the ages of 45 and 60, however. Prostatitis may be accompanied by such serious ailments as rheumatoid arthritis, diabetes, interstitial nephritis or arterio-sclerosis. If there is a male climacteric doctors will sooner or later weave their facts and deductions into a more enduring fabric. It is true that there is much more than shreds of acceptable knowledge relating to a male climacteric, but the greater part of present-day literature on this subject has no scientific foundation, and some of it consists of pure conjecture and individual opinions. When presenting this subject there appears to be a definite tendency to give sovereignty to rejuvenation, and it is clear that some writers confuse this term with re-erotization. One must admit that there are certain glandular products which stimulate the sexual organs, but it is a question whether this effect means rejuvenescence. It is not likely that even stanch proponents of "a male climacteric" will contend that stimulation and refreshing of certain glands should be accepted as a return to the natural condition found during youth—the juvenis.

1. Ferguson, J. F.: Problems of Old Age, Glasgow Med. J., 112:225, 1929.

However, old men who derive satisfaction from a return of sexual vigor, be it ever so slight, will accept the change as rejuvenation despite contradictory opinions.

If it were possible to obtain every fact pertaining to the lives of a chosen group of old men, one might then succeed in correlating such information and finally arrive at definite conclusions relating to a climacteric. It should be obvious that such a venture is highly improbable, but until that can be done comparatively little can be set down as factual data. Many men are, without doubt, extremely unhappy when they find themselves unable to obtain satisfaction from sexual congress. Conversely, it is believable that by far the greatest number of men are happier when this passion wanes. Desires of the first group can be likened to uncontrollable desires of young male animals of every species, as we see beautifully expressed in the Georgics of Virgil: "Indeed every kind on earth, both men and wild beasts, the fish, the cattle, and painted birds, rush into maddening fires; love is in all the same . . . they climb the mountains, swim the rivers . . . over rocks and cliffs and hollow vales they scour." A saying of Sophocles is descriptive of the second group. He writes, "The gods give me something better (than venereal pleasures); nay, I have run away from them with gladness, as from a wild and furious tyrant."

There seems to be an increasing number of writers from year to year who attribute certain changes in men between the ages of 45 and 60 to something akin to the menopause in women—this male climacteric, which some believe is a distinguishing mark of life's full maturity. If all the bizarre mental quirks and stories that are revealed to physicians by women passing through the menopause were incorporated in a book, it would be of considerable size. And to a certain extent a number of aging men show almost identical symptoms such as marked anxiety and instability at about the time their potency diminishes. This can be regarded as a coincidence, however, and some do so regard it. At that time aging men may be deeply introspective and nurture obsessions that, apparently, cannot be eradicated from their minds. Some have phobias that add to their distress, and these pave the way to fears of chronic invalidism or insanity. A number give way to tears in much the same manner as women do during the menopause, and it is said they find no pleasure in living. Occasionally we read about old men who have lost all sense of decency and self-respect in relation to sexual matters. Strange actions showing loss of self-control and an absence of decency in an old man may eventually startle his friends when they learn that he has even been accused of bestiality.

Until investigators present more substantial evidence in favor of a male climacteric, there are many who will not believe that some of the symptoms just mentioned are due solely to loss or even impairment of the sexual function. Who can point to any great difference between the escapades and the crimes of aging eunuchs, renegade ascetics, or men whose sexual accomplishments are, apparently, as virile as during the days of youth? Many of these strange symptoms laid on the threshold of a climacteric in man, might be fitted into a mosaic consisting of one or more types of insanity that no psychiatrist has even connected directly with loss of sexual vigor alone. While we are still groping toward a better understanding of various forms of insanity, we are constantly adding to or eliminating etiological factors. We seek to determine what is meant by a normal human being, and we are in despair when we undertake to be dogmatic and create acceptable definitions for the terms sanity and insanity. One thing we can be certain about, however, is that if the first human beings had perfect or normal minds the greater part of those who followed them down through the ages, are responsible for abnormal minds of today. In like manner we are still groping for facts relating to a male climacteric. We are not yet ready to accept loss of sexual vigor as the etiological factor of greatest importance in the causation of certain strange departures from normalcy that occasionally are observed in aging men.

WILL THE DOCTOR OF THE FUTURE BE PAID FROM A FUND RAISED BY TAXES?

Will the Doctor of the future be able to continue as an individual practitioner, or will he become an agent of the State? Will the physician of the future be paid by the patient, or

from a fund raised by taxes? These questions which a few years ago seemed so impossible are being asked today by all the physicians of the United States.

The question of tax supported medicine is of vital importance to every individual. It is in line with present government policies, and bears all the earmarks of being more significant during the coming five years. The progress in the field of medical science with accompanying rise in costs and a retrogression in the economic status of our people, constitutes the nucleus of our scientific and economic problem.

A M A IS DEMOCRATIC

The A M A is a one hundred per cent democratic institution and does represent the opinion of the rank and file of the physicians of Illinois and of the United States and does hold the complete confidence of its 110,000 members. It is high time the government officials, lay organizations and endowed foundations realize that the one and only group that can speak for American Medicine officially is the House of Delegates of the American Medical Association.

GOVERNMENT OF THE UNITED STATES IS TOO TOP HEAVY

As we have repeatedly said over a couple of decades we are suffering from over-centralization in Government. The government of the United States is becoming too top-heavy, a dangerous state, which in the past has wrecked, not only nations, but attendant civilizations.

We are now fast approaching this stage. Indeed the goodly portion of the people believe that we have already reached the stage of over-centralization with its accompanying menace a rule of the people by bureaucracy.

Taxes are both food and poison in that they may give life or they may destroy life.

Governments cannot employ and support people—only business and industry can, because they provide the things people want. All government can do is redistribute and apportion to provide certain services.

Medicine, as well as business and industry must have encouragement or they can't give service and go ahead and provide the things people need and want. Our government is over-centralized and entirely too top-heavy.

FORMER ATTORNEY GENERAL ATTACKS SUPPORTED MEDICINE

We quote from the *Illinois Dental Journal*, 1937, an attack on tax supported medicine by Thomas D. Thacher, former solicitor general of the United States and chairman of the New York City Charter Revision Commission. The address was given at the annual meeting of the New York Academy of Medicine. Mr. Thacher said that the fallacy of tax supported medicine is that it would blanket the country without regard to local conditions and individuals.

Mr. Thacher challenged also the constitutionality of socialized medicine under the proposed system of compulsory health insurance. He added that the states had no power to enforce for such insurance a sliding scale of costs between those in the upper and lower income brackets, or to take the money or property of the rich and give it to the poor. "Generosity in relieving distress is characteristic of our people, and particularly characteristic of your profession," he said. "But we pefer to do our own giving."

"To put it concretely," he said, "figures indicating averages for the whole of the United States are made the basis for the universal application of a single remedy without consideration of the local conditions under which it is applied. This is a peculiarly erroneous method of thought, and an extraordinary dangerous method of action."

Mr. Thacher pointed out that even the majority on the Committee on the costs of Medical Care did not favor attempting to impose upon the country or upon any community, a preconceived plan for the reorganization of medical service. On the contrary, he said, it pointed out the needs of the profession and of the people, which should be met in a process of evolution by which the profession could more effectively serve the people and be more adequately paid.

Mr. Thacher said that if the plan was to be compulsory it must have force of law and in that event might be authorized only by state legislation. "Ordinarily," he continued, "a state legislature will and must have regard for local conditions and local institutions. If, however,

the Federal government, following the pattern of the Social Security Act, should provide Federal appropriations in aid of compulsory health insurance, provided for under state statute, then pressure upon the legislatures of the states to set up such systems at the cost of the Federal government might very well result in such enactments without due consideration of the local institutions and the local needs.

"Serious question would certainly be raised as to the constitutional validity of such laws if they are made compulsory and if there is discrimination in the cost of such insurance as between those in the upper and those in the lower income brackets," Mr. Thacher said. "It is a great temptation to be charitable with other people's money, but the Constitution denies that privilege to the Legislature, althougt this limitation may sometimes be avoided through an exercise of the taxing power."

Mr. Thacher pointed out that the services of all the great hospitals, dispensaries, clinics, health stations and maternity centers, with all their equipment and technique, were available to the poor of the city. In addition, he said, W.P.A. workers and those on relief got medical and nursing card free. He said the problems in the South, where 5,000,000 persons live beyond the reach of medical and nursing care, were economic, and he contrasted this with the problems in New York City, adding that "such problems will not be solved by preconceived plans predicated upon statistics and average drawn from all over the United States.

IN MEMORIAM

Charles Delbert Snively breathed his last on August 2, 1938.

The passing of Dr. Charles D. Snively was a grievous blow to his associates, numerous friends and many acquaintances.

Dr. Snively's work in medicine and among men will not soon be forgotten. He was a genius for friendships and a genius for making men whole. He had too that rare adaptability, too infrequently seen, for making civic affairs and science go hand in hand.

To the practice of his profession Dr. Snively brought the best of American tradition.

Charles Delbert Snively, son of Francis Marion and Elizabeth Laswell Snively, Fulton county pioneers, was born January 20, 1875, at Cuba, Illinois. He was one of a family of ten children, all of whom were graduated from the Cuba High School. Their father was one of the first merchants in that community.

He chose to enter the medical profession and graduated from the College of Physicians and Surgeons at Keokuk, Iowa. He practiced a year at Fiatt, and another in Astoria before going to Summum where he remained for twelve years before coming to Ipava in 1909.

During the year in Astoria he made the acquaintance of Miss Harrietta Rice, daughter of a prominent family in the community, and they were married on March 5, 1902, at Monmouth, Illinois. They had one son, Robert Rice, now married and living in Chicago, where he will gradaute from the College of Medicine at the University of Illinois in 1939.

Dr. Snively is survived by his widow and son, two brothers, Frank R. and George E. of Cuba, and two sisters, Miss Elsie and Mrs. Ruth Higdon of Eureka.

Doctor Snively maintained the highest standards of his profession. He was one of those rare personalities whose sympathy and tenderness and compassion for the needy, the helpless, and the afflicted can only be likened to that of the Great Physician.

Throughout his forty-three years as a practicing physician, he enjoyed the friendship and highest esteem of his associates in the medical profession. He had for many years been an active member of the Illinois State Medical Society, and of the Secretary's Club of that organization, and gained wide recognition in medical circles for the originality of his work in the position of secretary of the Fulton County Medical Society over a period of sixteen years.

During the World War Doctor Snively was a First Lieutenant in the Medical Corps at Fort Oglethorpe, Ga., and rendered outstanding service to his country and his comrades during the terrible epidemic of influenza. He was eligible for promotion, but never asked for the higher rank, seeking not honor for himself but to serve others.

Of a social and friendly disposition, Dr. Snively delighted to mingle with his fellow-citizens in their many activities. He was a Past Commander of Harold C. Hoopes Post No. 17 of the American Legion, the Post Surgeon, and its new Adjutant. He was also a member of the Masonic Lodge, the Knight Templars of Damascus Commandery, Havana, and the White Shrine, and of the Knights of Pythias and Modern Woodmen of America.

He had many times served on the Village Board and was its President at the time of his death. His efforts in behalf of the progress and betterment of the community and its activities and institutions were unlimited.

Doctor Snively was in every sense a personality worthy of note. He came of good stock from a good home. He had a keen sense of justice, always a due consideration of the rights of others, always ethical. His greatest ambition was to do for others.

Few men were ever more devoted to their family. In his numerous travels covering every state in the Union it was his desire that his family share in the joys and pleasures as well as the education. His love of children and thoughtfulness of elderly people endeared him to both old and young.

He had a keen sense of humor as evidenced by

phases of his work as a long time secretary of the Fulton County Medical Society covering a period of 16 years. This was expressed in cartoons, and short pithical expressions in the program-invitations he mailed to the medical men. These programs were known and noted over much of the state.

Doctor Snively took a great interest in civic and community affairs. Was many times a member of the village board and at the time of his death was president of the board. During the activities to secure early action on the construction of hard road known as route 98, he was chairman of the committee to further the project. He, with other members of the committee, assisted by other tactful and liberal contributors, secured the right-of-way in a relatively short time. No worthy community problem or project ever failed to secure his whole hearted support.

It was, however, as a true physician that he excelled. He was a student of medicine, capable of making the best practical application of his knowledge of the healing art. He was not only one of the best informed physicians, but he commanded the love and respect of the community in which he worked. His judgment was always sound, his patients' rights always well guarded and protected.

Doctor Snively was more than a dispenser of medicine. He was a man who, by his mere presence, could work wonders in the sickroom. He was generous with himself, spending himself unstintingly for those in need. His outstanding characteristic was his devoted service to his fellowmen and this service was often rendered without thought of financial remuneration.

One of the truest proofs of this man's greatness of character was the fact that without exception he was loved and respected by the two extremes of life, the children and the aged.

The last rites for Doctor Snively were most impressive. The flag draped casket, surrounded with more than sixty large floral sprays of surpassing beauty was placed on the lawn beneath the sheltering branches of a cherry tree which stands close by his office window. More than one thousand persons from all walks of life came to pay their last respects to their departed friend.

Members of the American Legion and the Auxiliary from Ipava, Vermont and Table Grove attended in a body, as did the Order of the Eastern Star. Twenty-five of his professional associates were present from Farmington, Canton, Rushville, Macomb, Peoria, Lewistown, Cuba, Galesburg, Table Grove, Vermont and Ipava and several fraternal orders were represented.

VITAMIN E

H. A. Mattill, Iowa City (*Journal A. M. A.*, May 28, 1938), points out that in the five years that have elapsed since the publication of the previous symposium on vitamins in *The Journal*, knowledge of vitamin E has been advanced considerably. He gives a chronologic review of the chemical status of vitamin E. The progress of the chemical studies outlined required continuous animal assays of the biologic activity of the products obtained. The most suitable method of assay uses adult female rats, properly prepared by subsistence on a diet deficient in vitamin E. Ability to bear living young following the administration by mouth of varying amounts of concentrates is a measure of vitamin E potency; when the dose is inadequate, the embryos die and are resorbed. There is considerable and thus far uncontrollable variability in the response of individual animals to the same dosage, and few statistical studies have been reported. The reason for this is obvious; until recently the concentrates were all mixtures, and investigators were primarily interested in knowing the minimal effective dose of their preparations. The necessity of vitamin E for normal embryonic growth in animals other than the rat and the mouse has not been established, but several suggestive observations have been made in the field of animal production. The embryonic development of chicks in eggs from hens on a vitamin E deficient ration has shed some light on the abnormalities causing death in the embryo. Definite proof for the value of vitamin E as a remedy for sterility in human beings is manifestly difficult to secure. Many causes and conditions have been shown to be associated with human sterility, and, so far as animal experiments indicate, vitamin E is directly concerned with only one phase of the female reproductive process, namely, the blood supply and nutrition of the embryo, and in the male with the maintenance of testicular function. Administration of a purified wheat germ oil preparation resulted in the birth of living children in many habitual aborters. Massive doses of wheat germ oil have also, according to Shute, been useful in abruptio placentae and have prevented progress of these cases to a severe stage of placental detachment. This clinical experience followed the observation that the blood serum of aborting women had an increased resistance to tryptic proteolysis and that the serum of rats acquired the same property after about four months on a vitamin E-deficient diet; normal digestibility was restored in both cases by administering vitamin E. There is as yet no physiologic explanation for this. More clinical evidence, obtained under carefully controlled conditions, is greatly needed to establish the usefulness of vitamin E therapy in abnormal human reproduction.

IRISH METHOD

An Irish soldier in France during the 1914-1918 war received a letter from his wife saying there wasn't an able-bodied man left and she was going to dig the garden herself. Pat wrote at the beginning of his next letter: "Bridget, please don't dig the garden; that's where the guns are."

The letter was duly censored, and in a short time a lorry-load of men in khaki arrived at Pat's house and proceeded to dig the garden from end to end. Bridget wrote to Pat in desperation, saying that she didn't know what to do, as the soldiers had got the garden dug up, every bit of it. Pat's reply was short and to the point: "Put in the spuds."—*Tit-Bits.*

DO YOU KNOW?

From Science News-Letter

A medical examination before marriage is compulsory in Turkey.

MEDICAL ECONOMICS

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C. E. Wilkinson, M. D.

Address all letters and communications to the Chairman.

The final paragraph of the September article in this column was of the nature of a "feeler," to sound out the reaction of the medical profession in regard to their interest in politics in the coming election of United States Senators and Representatives. The reaction has been so favorable that the writer is encouraged to tempt fate and continue this article in the same vein, well knowing that he is treading on dangerous ground.

The special meeting of the House of Delegates was held in Chicago last month, and was attended by all the Delegates from Illinois as well as the President, Chairman of the Council, Secretary, and Chairman of the Legislative Committee. We take for granted that every member of the Illinois State Medical Society has read the complete report of this meeting as published in Journal of American Medical Association as of September 24. It will be noted in the final action that the delegates maintained their position that Socialized Medicine is neither needed nor required in the United States, even though they made some concessions to the desires of the Interdepartmental Committee, who held the Health Conference in Washington last summer.

It is, of course, impossible to report the general current of feeling and opinion amongst the delegates in an official publication, like Journal. Nor would be diplomatic to try to give the opinion of all the delegates on any subject, where a definite vote had been taken. However, the delegates from Illinois felt that many if not most of the delegates present felt that the main hope for the future of medicine, was not in any Committee appointed to consult with the Technical Committee of the Interdepartmental Committee, but rather in entering into the coming election with the hope of electing men as Senators and Representatives who understand the desires of the medical profession and will at least promise to give them consideration when the problem is presented to the Congress of the United States for action. Much better than this, would be for the medical profession to support those candidates for election, who give their written promise that they will oppose any attempts to socialize the practice of medicine. This seems to be the practical way to oppose Socialized Medicine. It is of much less importance whether the candidate runs on the Republican or Democratic Ticket, than it is what his stand on the question of Socialized medicine will be when the same is presented to him, as it unquestionably will be, at the next session of Congress. We realize that promises can not always be relied on, but there is a much greater probability of support from a candidate who will at least take a definite stand against socialized medicine before the election, than should be expected from a candidate who refuses to come out definitely either for or against the same. The record of those who have voted for or expressed an opinion favorable to Socialize medicine is so unfavorable that they should not receive any consideration from the members of the medical profession at this time.

With this general thought in mind, several members of the Council requested the Chairman of the Legislative Committee, to get an expression of opinion on this subject from all candidates for Senator and Representatives in the State of Illinois and make this information available to the medical profession of Illinois before the first Tuesday of November, so that they, the members of the medical profession will know on the day of voting exactly which men will help them to defeat any attempt in Congress to start Socialized Medicine in the United States, and who will not. With this information available, it should be very easy for any man to select the proper men to be his representatives in Congress. He should not allow party politics to befuddle him. It is of much less importance to the medical profession of Illinois whether the Senator elected is a Democrat or a Republican than whether he will give assurance

of being on the side of the medical profession in this fight. Every district elects a member of the House of Representatives at this election. It should be easy for the local members of the profession to get an expression of opinion from their local candidates than it is to contact the candidate for Senator. No member of the medical profession is too busy to take a little time off and go to see the candidates for the House of Representatives in his own district and let him know in no uncertain terms what the medical profession wants and attempt to get the candidate to take a definite stand in the matter. If the medical man will let the candidate know that he will vote for the candidate who is friendly to the medical profession and will oppose those who are either unfriendly or neutral, he will have less trouble getting an expression of opinion from the candidate. In addition, the candidate will be affected by the seriousness of the medical profession and pay more attention to their requests, the more members of the profession calling on him. This is the manner blocs and minorities have their influence on Congress and there is nothing reprehensible or unprofessional in so doing. We must not forget that there are two members-at-large to the House of Representatives to be elected at this time. The same methods can be used to influence them, although they are not so well known to the members of medical profession and are a little farther removed from personal influence.

We hope that the Chairman of the Legislative Committee will have the desired information ready in the near future and that he will communicate the same to the entire medical profession of the state, either directly or through the Officers of the County medieal societies. When a member receives this information, he should make the best and most use of the same and exert all the possible influence, hee may have to see that the candidates, who are friendly to the profession are elected and that those who are either non-commital or openly opposed are defeated. The medical profession should be a great politieal influence on such subjects as this, just as they are a great moral and social influence at all times.

I regret that I do not have an article from the pen of Dr. John Neal on this subject to present at this time. He had partially promised to have one at this time, but undoubtedly the job has been greater than he anticipated and he will communicate to the medical profession either directly or through the county socities. When he does so it is to be hoped that every society and every man in the society will make the election of the proper men his personal responsibility and exert all his influence. Failure to do so may result in election of men, who will succumb to the blandishments of the reformers, who avowedly have a bill ready to pass in the coming session of Congress, which will make the Soeialization of the Practice of Medicine a reality and not a peril. Then the opportunity of the medical profession will have passed and wailing will be of no avail. *Republican and Democratic Members of the medical profession,* forget your partisanship and support those men, who promise to preserve the private practice of medicine.

E. S. Hamilton, M. D.,
Chairman of Committee.

KILLING TWO BIRDS WITH ONE STONE

At the annual meeting of the American Medical Association, San Francisco, the Indiana State Medical Association presented a plan for the performance of public health services in doctors' offices. This was designated as a means of killing *"Two Birds with One Stone";* the two birds being *Socialized Medicine,* and *Disease and Death.* The plan was approved in principle by action of the House of Delegates, which instructed the Bureau of Health and Public Instruction of the American Medical Association to publicize the plan and call it to the attention of component and constituent societies.

We publish for educational purposes the plan reprinted from the Journal of the A. M. A., July 2, 1938:

INDIANA SUGGESTS A WORKABLE PLAN TO PROTECT THE HEALTH OF THE PEOPLE OF THE UNITED STATES

AN ANTIDOTE FOR STATE MEDICINE

Frequently today the physician finds articles in the press questioning his efficiency and his methods of practice. Such articles accuse him of ignoring preventive medicine in his daily work. He is bewildered and defensive in his attitude, for he feels that he is doing his job well. Even superficial observation will disclose the marked drop in death rate as a result of measures instituted by the medical profession in controlling tuberculosis, malaria, typhoid, diarrhea, yellow fever, puerperal sepsis and other infectious diseases.

Preventive medicine is now being practiced by all physicians as private practitioners to some degree. In many parts of the state, county medical units have a definite program. The time is ripe to correlate these scattered activities, survey our local situations, and acquaint the public with the extent of this phase of our work.

Many phases of preventitve medicine have advanced by stimulation from outside groups. Drives have been sponsored with much misunderstanding. Preventive medicine has now reached its maturity and should be utilized to the fullest by organized medicine and by the individual doctor. It is futile for one county or state to try to promote this alone. Disease and disaster are not aware of state borders. A national policy on the part of organized medicine is needed now.

Too long have we kept our light under a bushel. It is time to take the offensive. The amount of preventive medicine can be increased by the private practitioner with definite benefit to his community and to himself, and the public will be made to realize that American Medicine is pliable enough to continue as an individualistic enterprise.

Throughout the ages, medicine has adapted itself to social changes. We are now in one of those states of changing social customs and aspirations. The American public looks to organized medicine for leadership. Prevention of disease, early recognition of defects and diseases, reduction of hazards and prolongation of life are the important functions of a physician.

In Indiana we have visualized preventive medicine as a wheel with each spoke representing some important phase. Each phase is featured as a "Topic of the Month" in the *Journal of the Indiana State Medical Association* and is announced or discussed in each county medical society the month the subject is featured. The topic of the month is given support in the press and is discussed by speakers before medical and lay groups.

TOPICS OF THE MONTH

January—Formulation of Plan.
February—Syphilis.
March—Pneumonia.
April—Diphtheria.
May—Maternal and Child Health.
June—Crippled Children.
July—Highway Accidents.
August—Occupational Diseases.
September—Annual Physical Examinations and Heart Disease.
October—Conservation of Eyesight.
November—Tuberculosis.
December—Smallpox.

PURPOSE

To promote aggressive leadership by Organized Medicine in Prevention of Disease and early detection of defects.

To incorporate preventive medicine as an important phase of private practice and of county medical activity.

To promote a National Health Program with emphasis on Prevention of Disease sponsored by the American Medical Association with due regard for local situations.

Our modern age demands cooperative efforts by organized medicine to distribute modern medicine.

DIVIDENDS OR RESULTS

1. Create good will and public approval.
2. Raise general standard of medical practice.
3. Prevent many deaths and much suffering.
4. Give a better ordered life for the doctor.
5. Give a steadier income for the doctor.
6. Intelligent defense against disease is our best defense against government encroachment.

ALTERNATIVE

Noisy and aggressive lay groups will seize leadership and we will trail behind, cloaked with heavy governmental supervision.

SYPHILIS

"No Baby Born with Syphilis in Indiana by 1940"
Can be controlled by:

1. Premarital examination including blood test.
2. Blood test early in every pregnancy.
3. Making good treatment available to all.
4. Good laboratory service available to all.
5. Reporting of new cases by name or number to health department.
6. Tracing contacts by trained social investigators.
7. Free distribution of drugs for medically indigent patients.
8. Isolation of infectious, noncooperative cases.
9. Making provision for infectious transient or itinerant.
10. Cooperation of private physicians and public clinics.
11. Developing and popularizing a minimum standard of treatment for early syphilis.
12. Continuing the educational program among medical and lay groups.
13. Helping the Negro solve his syphilis problem.
14. Spinal puncture on every treated case.
15. Spending the syphilis dollar where it counts.

PNEUMONIA

1. Leadership by the medical profession in developing a complete pneumonia program for all the people.
2. Recognition by the physician of the importance of early diagnosis and early treatment of pneumonia and the use of life-saving types of serum.
3. Development of facilities so that typing may be done within four to six hours.
4. Appointment of committees by state and county medical societies for special studies in pneumonia.
5. Adequate nursing care for home cases.
6. Development of adequate hospital facilities.
7. Education of the public as to the gravity of the whole pneumonia problem, and the fact that the common cold often is an antecedent for pneumonia.
8. Education of the public as to what may be expected if pneumonia is properly handled.
9. Formation of serum "banks" in order to supply serum immediately and free to the indigent or on proper credit to those who are solvent but incapacitated.

10. Try to lower the cost of present forms of treatment.

11. Usual well established supportive treatment indicated in addition to serum treatment.

12. Teach the physicians generally the importance of early typing of every suspected pneumonia.

DIPHTHERIA

1. Immunization of every child at 1 year of age by family doctor.

2. Accomplished by following plan:

When child is 1 year of age local health officer sends a double postcard to the parents stating that it is the judgment of organized medicine and health authorities that now is the time to immunize the child against diphtheria and to see the family doctor at once. When the injections have been completed the doctor returns the second half of the card to the health officer.

If immunization of the child is unpractical from the standpoint of (1) finances, (2) moved away, (3) death of child, (4) religious objection of parents, the parents are asked to check and return. The medically indigent are handled according to the customs of the community.

3. When child enters school he receive a Schick test or another injection of toxoid.

No Drives—No Misunderstandings—Constant Pressure.

MATERNAL AND CHILD-HEALTH

"SAFE MATERNITY—HEALTHY CHILDREN"

1. Good antepartum care available to all.
2. Nursing assistance at home deliveries.
3. Continued study of the causes of maternal and infant mortality by organized medicine.
4. Inquiry as to cause of each individual death by the state committee and hospital staff.
5. Immunization program for all children.
6. School health programs—physical health education—distribution of literature on health.
7. County public health nursing program under medical advisory committees of local counties.
8. Mental hygiene program for children.
9. Dental educational and reconstruction program.
10. Postgraduate work for physicians, dentists and nurses.

CRIPPLED CHILDREN

"CORRECT REMEDIAL DEFECTS EARLY"

1. Include in birth certificates the presence or absence of congenital defects.
2. Cooperation of state medical association through advisory committee.
3. Nurses contact physicians, who report cases.
4. Early consultation made available to all.
5. Children treated in approved hospital near home if possible.
6. Schools for crippled children in the larger cities.
7. Reciprocal arrangements between states for transient crippled child.
8. Find and offer aid to the older crippled child.

HIGHWAY ACCIDENTS

1. A study by organized medicine of the causes of death from highway accidents.
2. Assist the law enforcement agencies in reducing the hazards of the careless and drinking driver.
3. Aptitude test on the repeating offenders.
4. Probabtionary period for young drivers.
5. Cooperate with the American Red Cross in first aid instruction.
6. Filling station attendants to be given instruction in first aid.
7. Develop protection for the doctors and hospitals from irresponsible injured.

OCCUPATIONAL DISEASES

Occupational diseases form approximately 2 per cent of the total disability from industrial causes.

1. Assist employers to cope with employees' health problems with cooperative attitude on the part of the medical profession.
2. Preemployment thorough physical examination.
3. Periodic health examination. (If routine blood tests are made on the employees, treat—don't fire.)
4. Majority of occupational diseases are skin infections, many of which are preventable.
5. Patch testing of employees in occupations producing dermatitis will greatly decrease illness.
6. Teamwork of industrial physician and general practitioner is very desirable.
7. Industrial physician should direct patients with diseases other than those resulting from employment into the channels of ordinary practice.
8. Find the job that best fits the employee physically.
9. Use existing hospital facilities as much as possible.

ANNUAL PHYSICAL EXAMINATION AND HEART DISEASE

1. Educate physicians in better recognition of heart disease.
2. Teach the newer methods of studying functional capacity of the heart.
3. Teach the seriousness of "mild" infections as a background for heart crippling.
4. Teach the role of weight, heredity and environment in the production of hypertension.
5. Educate the physician and layman as to the seriousness of rheumatic infections.
6. Continue to emphasize the role played by syphilis in the problem of heart disease.
7. Train heart cripples of all ages in pursuits that permit them to accommodate their defects.
8. Educate physicians and the public in the importance of periodic examinations.
9. Urge the need for careful periodic examinations after middle life.
10. Stress the need for certain laboratory and x-ray studies at regular intervals: urinalysis, serologic, electrocardiographic and similar laboratory procedures.

CONSERVATION OF EYESIGHT

1. Ophthalmia Neonatorum. Prevent by prompt instillation of silver nitrate, 1 per cent or 2 per cent solution, into the eyes of the newborn.

2. Squint or crossed eyes. Begin treatment not later than age 2.

3. Discourage the use of high explosive fireworks in the hands of children. Reduce fourth of July eye injuries.

4. Examination of school children for visual defects.

5. Avoid eyestrain. A. Correct visual defects. B. Prevent and treat diseases of the eye. C. Install proper lighting. D. Reasonable use of the eyes according to effects of use.

6. Help reduce hazards from industrial accidents.

7. Early detection and treatment of syphilis will reduce blindness.

8. Wipe out trachoma in Indiana.

TUBERCULOSIS

1. Physical examination of every child at age 16, including tuberculin test.

2. Thorough physical examination on entering college or industry.

3. Examination of all nurses on entering training and recheck at regular intervals.

4. X-ray available for positive reactors.

5. Trace contacts and examine.

6. Protect the community from infectious cases by adequate number of hospital beds.

7. Concentration on detection of early cases.

8. Cooperation with antituberculosis association and public health nursing organizations.

9. Continue educational program in high schools.

10. Use collapse therapy when indicated.

11. Rehabilitation program.

SMALLPOX

1. Vaccinate every child at age of 1 year after completion of diphtheria immunization.

2. Vaccinate again on entering grade school and thereafter at regular intervals by the family doctor.

Extend the scope of preventive medicine to include other infectious diseases and metabolic disturbances as methods are proved to control them.

THE INDIVIDUAL'S MEDICAL SERVICE CHART THROUGH LIFE

Three Months Pregnant	
Measurement of pelvis	Reduction in maternal mortality
Blood pressure—urine	Prevention of congenital syphilis
Wassermann test	
At Birth	
Silver nitrate in baby's eyes	Prevention of blindness (ophthalmia neonatorum)
First Week	
Physical examination of baby	Recognition and correction of remedial defects
First Year	
Correct infant feeding	Prevention of diarrhea-rickets and scurvy
One Year of Age	
Immunization and vaccination	Prevention of diphtheria and smallpox
Two to Fifteen	
Annual check-up by the family physician	Individual health education
Sixteen Years	
Physical examination with special attention to lungs	Prevention and early recognition of tuberculosis
Before Marriage	
Premarital examination	Recognition of venereal diseases
Adult Life	
Annual physical examination	Prevention of heart disease

Reduction in Hazards

1. Venereal disease control
2. Pneumonia control
3. Highway accidents
4. Typhoid
5. Nervous disorders
6. Occupational disease
7. Cancer

Bureau of Publicity
Indiana State Medical Association
1021 Hume-Mansur Building
Indianapolis, Indiana

THE RELATION BETWEEN PHYSICIANS AND HOSPITALS

The report of the committee "Relation of Physicians to Hospitals (I. H. Neece chairman) presented to the council of the Illinois State Medical Society at its meeting in Chicago, September 4th, was approved and ordered published. The report is as follows:

At this time when the medical profession is much concerned with the attempts of lay groups, cooperatives, insurance companies, associations, corporations and governmental agencies to take over various phases of the practice of medicine, the House of Delegates of the Illinois State Medical Society moves the adoption of the following principles to prevent similar relations between hospitals and physicians which are not in the best interests of public welfare.

"A. Community hospitals are civic enterprises, having a primary charitable motive, undertaken by philanthropic laymen who assume the financial obligation of providing place, equipment and personnel, and by philanthropic physicians who assume the obligation of providing medical care. Such a hospital is a joint enterprise to render aid to ill, indigent persons; the lay supporters contributing time and money as such, the medical supporters contributing time and money in the form of professional service.

"B. In order to provide hospitalization for the non-indigent such hospitals customarily maintain accommodation for the care of full-pay patients, as well as for the care of partial-pay patients, who pay for this service according to their ability.

"C. In any of these types of hospitalization, however, the hospital as a corporation provides room, board, nursing and material, beyond which it has nothing to dispose of; at this point the medical staff enters the equation as the essential element to make the service of the hospital whole and effective.

"D. The staff physicians' services are essential to the charitable purpose of the hospital and the acceptance of his appointment has a certain contract implication, viz., to perform gratuitously the professional service to make effective the hospitalization afforded gratuitously by the institution. A correlative implicaton of the contract should be that if the institution is recompensed for its service to the patient, the physician should be entitled to recompense in the same proportion, for if the hospital owes it to the supporting public to make the load of charity as light as possible, it owes the same duty to its supporting staff. Otherwise, the effect is that the lay supporters of the hospital are relieved of part of their burden, whereas the medical supporters bear the entire burden of their contribution.

"E. This contribution to the hospital enterprise is not offset by any advantage offered by the hospital connection to the staff physician. If it be said that the hospital lends prestige to the staff, it is much more true that the prestige of the hospital depends upon that of its staff.

"F. Hospitals should realize that the profession, through its central organization, the American Medical Association, has evolved certain "principles of medical ethics," outlining the duties of physicians to each other, to the profession at large and to the general public; that this code is the evolution of hundreds of years experience being based on principles that are primarily for the good of the public in order that the profession can serve it most effectively. Since the profession is bound by these principles, hospital boards should study them carefully in order to better realize the physician's viewpoint. (While hospitals have no general code of ethics, those prescribed for physicians have generally been interpreted as applying to hospitals. The connection between medical ethics and hospitals is also recognized in codes of ethics for state hospitals is also recogand in the code of ethics for hospital publicity of the American Hospital Association.) This should enable hospitals to correlate their service more adequately to cooperate with the profession to render better service to the public. One section of the "principles of medical ethics" with which many hospital boards are apparently unacquainted states (Article 6, Section 4):

"It is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however, organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure is beneath the dignity of professional practice, is unfair competition with the profession at large, is harmful alike to the professon of medicine and the welfare of the people, and is against sound public policy.

"G. Hospitals being corporations, their management and policies are the proper prerogatives of their boards of directors. The organization of such boards commonly has overlooked the fact that there are two necessary factors,—the services of laymen, as well as the services of physicians, to make the institution effective and the medical staff has usually not been represented. Failure to have the medical staff represented on the board of directors of hospitals has occasioned two undesirable results: (1) the appearance of policies prejudicial to the medical profession, because the influence and information obtainable from medical members has not been available; and (2) the development of the idea that the staff members are servants of the institution rather than essential partners.

"H. It follows that the medical profession to protect its rights, should insist upon proper representation on hospital boards and that hospitals recognize the profession as partners rather than servants of the institution. (It is suggested that not less than two members of the hospital staff, preferably chosen by the staff itself, serve on the hospital board.)

In view of the above stated principles the following recommendations are made:

1. That no hospital shall be permitted to engage in any form of contract practice with an individual, or group of individuals, for any purpose other than the use of physical facilities, materials, and non-medical services such as room and board, use of the operating and delivery rooms, drugs and medicines, surgical dressings, appliances and general nursing care.

2. That no hospital shall offer, for a price, any medical service.

3. That in no case may a hospital charge a patient for other than the use of its physical facilities, materials and non-medical services.

4. That emergency and accident patients may have first aid only, administered at the hospital, and the physician selected by the patient must be immediately notified. In no case shall a patient, able to pay, be admitted to the service of a staff member without the request of the patient's own physician, if there be one.

5. That patients who are covered by compensation, health or accident insurance, cannot be considered as indigent.

6. That none but strictly indigent patients shall be admitted to dispensaries.

7. That no patient, except in emergency, shall be admitted to a dispensary without a letter from a physician, to be followed by adequate investigation by the social worker to the hospital, who shall be able to certify that the patient is known to be indigent.

8. That patients who have been discharged shall not later be re-admitted to a dispensary, without certification by a physician that his present economic condition is the same as on his previous admission.

9. That a committee be appointed by the Council of the Illinois State Medical Society, to meet with a Committee of the Illinois Hospital Association for the purpose of creating a standing council to encourage and facilitate the application of these principles, to further codify relations between physicians and hospitals, and to act as a Board of Review in considering violations of these principles by hospitals and physicians.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY, INC.

The next examinations (written and review of case histories) for Group B candidates will be held in various cities of the United States and Canada on Saturday, November 5, 1938, at 2:00 P. M., and on Saturday, February 4, 1939. Application for admission to the written examination scheduled for February 4, 1939, must be filed on an official application form in the office of the Secretary at least sixty days prior to this date (or before December 4, 1938).

The general oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire Board, meeting in St. Louis, Missouri, May 15 and 16, immediately prior to the annual meeting of the American Medical Association. Application for admission to Group A examinations must be on file in the Secretary's Office before April 1, 1939.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Bldg., Pittsburgh (6) Pa.

AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

The annual meeting of the American Association for the Study of Goiter for this year will be held in Washington, D. C., September 12, 13 and 14 in conjunction with the Third International Goiter Conference. A final program will be available at the time of the meeting and will be distributed to all attending physicians at the registration desk on the morning of September 12.

Very truly yours,
W. Blair Mosser,
Corresponding Secretary,
Kane, Pa.

NOTICE

A prize of value £10/—will be awarded to the contributor of an approved thesis on "Venereal Diseases." The thesis should be in English. The entry fee in this competition is only 4 shillings. Entry fee must be sent by money-order or postal orders. There is no territorial bar for the competitors. The result will be sent to every competitor. The thesis will be judged by a board of Examiners and the decision of the Board will be final on all matters. The thesis should reach the Editor—The Punjab Medical Journal, Banga, (Punjab-India), by registered post on or before 30th December 1938. The Editor has a right to publish the thesis received.

W. Capon,
Banga, (Punjab-India), Editor.
Dated 25th July 1938. The Punjab Medical Journal.

H. L. MENCKEN COMMENTS ON MEDICINE UNDER THE NEW DEAL

H. L. Mencken in the *Sun,* Baltimore, Sunday, August 21, 1938, under the title "Medcine Under the New Deal," comments quite learnedly, we quote:

The project of the New Deal Kremlin to liquidate the American Medical Association under the Sherman Act appeared at first glance to be only an elephantine sort of practical joke, and in that character I discussed it lightly in the *Sunpaper* of August 5. But in a little while news came from Washington that the boys really proposed to go through with the show, and on August 13 a talented New Deal professor, Dr. Walton Hale Hamilton, was assigned to set me right about it and put me in my place.

I have read Dr. Hamilton's exposition in an humble spirit, but can only report that it leaves me profoundly unimpressed. It is smart but not adroit; voluptuous but not persuasive. Its substance is contained in the following paragraph:

"The technology of medicine has made its great advances by trial and error; the arrangements under which patients have access to medical services must be kept subject to a like revision. It is silly to encourage experimentation in the medical laboratory and to forbid it in the realm of medical economics."

Well, what does this mean? If it means anything at all, it means that the American Medical Association is opposed to all such experimentation, and is trying by some means or other to stop it. Is there any truth in that allegation? There is no truth in it whatsoever.

The plain and simple truth is that the *Journal* of the association, for eight or ten years past, has given over a large part of its space to the description and discussion of new "arrangements" of medical practice, and that more than one of these "arrangements" has been passed as unobjectionable, and is being tested at this very moment by members of the association in the highest standing.

I point, as a near and obvious example, to the scheme of the Associated Health Service of Baltimore. That organization, which now has nearly 25,000 members, is not only tolerated by the local bigwigs of the A. M. A., but was actually launched and underwritten by some of them. All of the Class A hospitals of Baltimore, absolutely without exception, have agreed to accept subscribers to the service as patients, and all or nearly all of them contributed to the funds needed to set it going. Two of its directors are Dr. Winford H. Smith, director of the Johns Hopkins Hospital, and Dr. Arthur J. Lomas, director of the University Hospital, and not a few of the staff doctors of both hospitals have joined it as members, and brought in their wives and children.

The reasons for this tolerance are not far to seek. They lie in the plain and simple fact that the Health Service does not undertake to practice medicine, but simply provides its members with hospital care and accommodation. Every one of them is free to choose his own doctor, and any doctor may be chosen who has the privilege of taking patients to any Baltimore hospital. There is no intervention between doctor and patient. There is no shading or conditioning of the doctor's professional dignity and independence.

The "arrangements" to which the American Medical Association objects, and quite properly objects, are entirely different. They not only offer hospital accommodation, but also medical service. They employ doctors, organize them into staffs, put them under superiors (some medical, but others lay), and hire them out to subscribers. Whatever the subscribers pay for their services goes, not to the doctors, but to the organization. It pays them whatever they are willing to work for, and keeps the rest.

Obviously, no doctor who works under such conditions can be said to maintain a strictly professional status. He may have a good job; he may like it, and he may give competent and conscientious service to the patients assigned to him, but in the last analysis they are the association's patients, not his. It may take them away from him at will, and assign him others. It may take them all away from him by dismissing him. They exist as his patients only by the association's grace, and on conditions that it lays down.

Certainly the lawyers in the Department of Justice must be well aware that an analagous effort to invade and deprofessionalize their own profession has been

under way for years and that nearly all the decent lawyers in America have opposed it violently and gone into court time and again to prevent it. All the objections that these decent lawyers have brought against the practice of law by corporations are valid against the practice of medicine by corporations. Both schemes, however artfully they may be disguised, involve the organization of professional men into gangs bossed by laymen and the retailing of their services to all comers. Both are completely destructive of their professional status.

The present disingenuous assault upon the American Medical Association did not originate in the Department of Justice. It originated in quite other quarters and has been going on for a long while. There are doctors who aspire to office in the association, with all the honors and dignities thereto appertaining, but do not seem to be able to get the necessary votes; they appear to believe that their chances would be better under some sort of medical new deal. And there are quacks who have felt the association's heavy hand they are against it on all counts and to the death.

Both these parties have been on the warpath for years. Of late they have been joined by a miscellaneous rabble of pinks, some of them outright converts to the Moscow hooey and others members of the "I'm Not a Communist—But" Association. The aim of these brethren is to nationalize the profession of medicine in the United States as it has been nationalized in Russia. Some of them say so frankly, and undertake to prove idiotically that the Russian system is better than the American. The rest, less honest, root for it without openly advocating it.

All the pink weeklies and other manic-depressive sheets are hot against the A. M. A. and belabor it constantly. They denounce it under the name of the medical trust, and allege that its members are racketeers who rob their patients and oppress the poor. The justice and decency of these charges may be indicated by putting them into concrete terms. What they allege, in plain English, is that such men as Dr. Thomas S. Cullen, Dr. Dean Lewis and Dr. John T. Finney are racketeers, and that scores of able and faithful men and women who labor in the Johns Hopkins and University of Maryland dispensaries every day are oppressors of the poor.

The chief butt of all such scurvy liars is Dr. Morris Fishbein, editor of the *Journal of American Medical Association*. In the fulminations of the pink weeklies he is commonly promoted to the presidency of the association and depicted as its Stalin, Hitler and Mussolini. I happen to be well acquainted with Dr. Fishbein, and may be presumed to have some qualification for judging him as an editor. It is my belief that no abler, more honest, more intelligent or more courageous editor is in practice in the United States. Week after week, year after year, he produces an unfailingly competent and valuable paper.

In all the history of American medicine, no other medical editor save his predecessor and mentor, Dr. George H. Simmons, has labored more valiantly and effectively to raise and safeguard the standards of the profession. He has been in the forefront of every effort, by whomsoever initiated, to put down buncombe and quackery and to promote sound medicine. Every improvement that has been made in his time, whether in professional education, in hospital service, in research and experiment, or in the bettering of relations between doctors and the public, has had his energetic support.

The quacks of all schools are naturally against him. The osteopaths and the chiropractors, the patent medicine harpies and the Christian Scientists have been banging away at him for years. Now they have got the support of the New Deal. It is a logical and legitimate alliance.

WHAT IS THE ISSUE?

At the September meeting of the council of the Illinoin State Medical Society, Dr. I. H. Neece, chairman on the committee on Relations of Physicians to Hospitals, presented a resume of an article of the same title by Mac F. Cahal, International Society Committee for Radiology. The article should be read by every member of the Illinois State Medical Society. The report was approved and ordered published. We quote:

For a number of years there has existed a controversy, which occasionally and in certain communities has flared into warlike proportions, between organized hospitals and the organized medical profession concerning the practice of medicine in hospitals. Particular interest has centered around the specialties of radiology, pathology, anesthesiology, physical therapy, and others which are closely identified with the treatment of patients during hospitalized illness.

During recent years the question has been brought to a head by the advent of hospital insurance and by the determination on the part of some hospital administrators, met by decreasing endowment income, to reap a "middleman's" profit from fees paid for medical services performed in the hospital. To make hospital insurance more saleable they have demanded that certain medical services be included in the benefits offered by the hospital. To secure needed revenue they have employed specialists on a salary or commission basis, sufficiently low to permit, in some cases, a handsome net income to the hospital after all expenses are paid.

Organized medicine has steadfastly insisted that the quality and the future of medical care will suffer if private practice is supplanted by institutionalized practice, delivered, sold, and controlled by a third party corporation, hospital or otherwise. Medical practice, says the profession, belongs to doctors, and the physician's relation to his patients must not be complicated by a corporate distributing agency. Hospitals they say, are institutions where doctors may treat the sick, retaining the same professional relationship with the patient that they have in the home or private office.

The American Hospital Association, representing the organized hospital world, has, with a good deal of emphasis, expressed an opposite view. The hospital, they

say, is more than a place where doctors treat their patients. It is an institution which provides not only facilities but medical service. In this day of corporate structure and mass production, the hospitals say their function includes the provision of certain medical services through the medium of employed physicians under salary or commission contracts.

With diametric "principles" promulgated by first one side and then the other, and with prejudiced opinion presented as legal and ethical fact, it seems desirable that certain definitions be drawn and certain statements examined. The issues should be frankly and clearly stated.

The medical profession recognizes that improvements in hospital facilities and administration have been partly responsible for the tremendous strides of medical science and the high quality of medical care enjoyed by the American people today. Hospital administrators are no less approbrious in their praise of the physician for his humanitarian contributions to the public welfare.

The differences arise in the question of economics. The medical profession demands that the hospital meet its financial obligations with revenues from its endowments, its income from charities, and its profits on the rental of its rooms and facilities, and the sale of its *hospital* services. It denies the hospital's right to earn a profit from the sale of physicians' services.

And there is the issue. The American Hospital Association insists that the hospital has a right to provide certain medical services, along with its hospital facilities. Says the Board of Trustees of the A. H. A. "Provision of medical services in hospitals is part of the responsibility of the hospital." W. P. Slover, a hospital superintendent, writing in the Journal of the A. H. A.,[1] advises hospitals to increase their revenue by educating the public to "more regular use of the laboratory, the x-ray and diagnostic services for systematic check-ups on their health." That this places the hospital corporation in competition with private physicians is no concern of the author's. Editorially, the same Journal,[2] declares that, "Diagnosis, treatment, and care of the ambulatory sick become increasingly the function of the hospital, as the hospital develops into the centre of community health activities."

It is well recognized that corporations, being artificial legal entities, cannot be licensed and are therefore not permitted to practice medicine. Among hospitals there is a widespread belief, presented as legal fact, that incorporated hospitals do not fall under this category. Says their official Journal,[3] "The laws regulating the practice of medicine by corporations do not apply and were never intended to apply to hospitals." No authority for the statement is cited. The Board of Trustees of the A. H. A.[4] is slightly contradictory when it attempts to justify corporate practice by declaring that it isn't corporate practice. "The performance of diagnostic and therapeutic procedures by staff members constitutes the practice of medicine *in* hospitals. It is not the practice of medicine *by* hospitals," they say. Presumably this would be true even if such practice *in* the hospital enabled the hospital to secure a nice fat income. Offering a "principle" again as a fact, the Board states that, "The financial arrangement between a hospital and a physician is not a determining factor in the ethics or legality of medical practice" by physicians practicing in the hospital are not engaging in such practice. Says the hospitals.

Furthermore according to the hospitals, even if these two rationalities are disproven, radiology, pathology, and certain other specialties are not the practice of medicine but are part of hospital care. Apparently the hospitals are not too sure of their ground, else they would not find it necessary to provide three premises for the same syllogism. Hospitals which practice medicine for a profit do not practice medicine; anyway laws prohibiting corporate practice do not apply to hospitals; and if these both be untrue, the services under question are not medical services but are hospital services.

"At what point can a line be drawn, if anywhere, between 'hospital' service and 'medical' service?" asks Michael Davis, a member of the Council of the A. H. A.,[5] implying that the one is the other. As a matter of fact the question is not so difficult as the above author would make it appear. The terms are properly used—one is hospital and one is medical. Numerous court decisions have defined the terms and according to Bouvier's Law Dictionary,[6] "The primary meaning of the terms medical attendance or medical services is the rendering of professional medical services." The Supreme Judicial Court of Massachusetts has held that,[7] " . . . While the term 'medical services,' if used without limitation, may be susceptible of a broad construction, the statutes cited clearly indicate that those words, as therein used, are restricted to medical assistance rendered by the physician or under his direction and control."

Physicians have delegated certain medical functions to be performed by nurses, interns, and other employees of the hospital under their direction, but these functions are performed by the hospital corporation through the sufferance and under the authority of physicians. It does not confer upon hospitals the right to indulge in the practice of medicine by themselves in disregard of the preference of physicians. Doctors can exist without hospitals but hospitals cease to become hospitals without doctors.

It is likewise true that the courts are well agreed that corporations cannot practice medicine and that this applies to hospital corporations. In Granger v. Adson[8] the Minnesota Supreme Court reasoned that inasmuch as a corporation or a layman could not practice law by employing a licensed attorney, for the profit of the corporation or layman employing him, to act as attorney or counsel for others, it was improper and contrary to statue and public policy for a corporation or layman to practice medicine in a similar way. Simi-

1. HOSPITALS, June, 1938, p. 50.
2. HOSPITALS, May, 1937, p. 73.
3. HOSPITALS, June, 1938, p. 65.
4. In a statement adopted June 18, 1938.
5. THE MODERN HOSPITAL, July, 1938, p. 57.
6. Baldwin's Century Edition, p. 795.
7. People v. Pierson, 176 N. Y. 201.
8. Granger v. Adson, et al. Minn. 250 N. W. 722.

lar decisions have been rendered by courts in many other states.

When the editors of the Journal of the A. H. A. make the statement that, "The laws regulating the practice of medicine by corporations do not apply and were never intended to apply to hospitals,"[9] they are, to resort to useful vernacular, talking through their hat. This and a number of other statements emanating from hospital headquarters are rather convincingly refuted in a recent opinion by Judge J. F. Bouchelle of West Virginia.[10]

After citing considerable authority to support his opinion that a hospital corporation could not practice medicine, the Court concluded by saying, "In order that there be no misunderstanding as to the scope of this opinion, attention is directed to the fact that it is not intended to preclude contracts by individuals or corporations to furnish *hospital facilities* only. . . . Neither is it intended to prevent medical attention gratuitously contributed by doctors and surgeons to patients of incorporated charitable organizations." This last should help worried Mr. Davis to answer the rhetorical questions contained in his recent article in *The Modern Hospital*.[11] He should be interested also in the legal definitions cited above.

For reasons of brevity it is impossible to quote the many court decisions or the statutory law bearing upon all the points raised in recent official statements by organized hospitals. Suffice it is to say here that there is ample authority to disprove many of their contentions, granting at the same time that the courts are by no means completely agreed on some points.

By a rather vitriolic exception to certain principles adopted at the San Francisco session of the American Medical Association, organized hospitals have clearly defined the issue. Organized medicine wants the practice of medicine to be left to private physicians—organized hospitals demand that they be privileged to take over certain specialties to be sold at a profit by the corporation. Especially are they insistent that in hospital insurance plans, they be allowed to include certain medical services as benefits along with their hospital services. Medicine denies them this right, on the grounds that it alters the professional status of the physician and is contrary to public policy.

The Philadelphia County Medical Society went to court to enjoin local hospitals from proceeding with such a plan against the expressed desires of the profession. After several days of testimony before the Master, the attorneys for the hospitals agreed to accede to the demands of the county society and the suit was withdrawn. Doctors who testified made it clear that they objected, not to insurance which paid cash benefits for medical services, but to the inclusion of these services as benefits in kind to be offered as a part of hospitalization. The victory in Philadelphia sets a valuable precedent and should serve as a lesson to hospital groups who may get the mistaken idea that they are authorized to determine the methods by which doctors shall practice their profession.

As for radiologists, pathologists, anesthetists, and others whose specialties are most coveted by the hospitals, they hold to the same philosophy and ethical principles as does all organized medicine. While it is undeniably true that contractual relations between practitioners of these specialties and their hospitals have placed many of these physicians in the position of an employee of the hospital corporation, the fact remains that theirs is a medical service and not a hospital service. Radiologists, for instance, have permitted hospitals to collect their fees, receiving in reimbursement a salary or commission, for the simple reason that it offered an accounting convenience. Never have they relinquished their professional rights as physicians and never have they agreed that they were performing a hospital service instead of a medical service. The science of radiology belongs to radiologists, not to hospital corporations directed by a lay board of trustees. Regardless of the fiscal arrangement under which a radiologist practices his profession in the hospital, he denies the hospital a right to profit from his practice or to sell his services on an annual premium basis to groups of insurance subscribers. The hospital is entitled to retain a portion of radiologic fees sufficient to repay it for its costs in maintaining a department where patients can be treated and where the doctor may treat them, but it has no moral, legal, or ethical right to demand a net profit from professional services rendered by members of the staff in the hospital.

In a recent article in the Journal of the A. H. A.[12] S. S. Goldwater falls back on an old and ingenious method of evading the profit issue. Inasmuch as hospitals are non-profit corporations, says the learned doctor, it cannot be said to be practicing medicine for a profit when "organizing, participating in, and facilitating the business transaction" incidental to medical practice. Of course hospitals lose money; that is their purpose and function. But when they engage in the hospital business at a loss, that gives them no right to engage in the practice of medicine at a profit to lessen the burden of their charity. Doctors are not subsidized by philanthropy—hospitals are. Doctor Goldwater goes further to echo the statement of numerous other hospital executives when he remarks that the practice of medicine by hospitals results in reduced costs to the patient. It is hard to understand how the interjection of a third party, obviously concerned with a profit for itself, will reduce the cost of medical care below what it would be if the transaction took place between the doctor and his patient.

Here then is the issue. It has been clearly, if perhaps unwittingly, stated by organized hospitals. Without evidencing the customary obsequiousness of a suitor, they are proposing marriage, and if their proposal is spurned they have let it be known that they intend to force the issue. With equal forcefulness, and not in the least flattered by the proposal that they sacrifice the freedom of celibacy, practitioners of medical specialties have let it be known that they are not interested in such a marriage, especially when it en-

9. op. cit.

10. Amick v. Staats Hospital, in the circuit court of Kanawhat County, W. Va.

11. op. cit.

12. HOSPITALS, July, 1938, p. 11.

tails division of their income with an impecunious spouse.

ILLINOIS STATE MEDICAL SOCIETY

COUNTIES WITH 100% PAID UP MEMBERSHIP FOR 1938

Adams	Jasper
Alexander	Jefferson-Hamilton
Bond	JoDaviess
Boone	Johnson
Clark	Marion
Clay	Monroe
Clinton	Piatt
Coles	Richland
Cumberland	Schuyler
Crawford	Shelby
DeKalb	Stephenson
Douglas	Tazewell
Edwards	Vermilion
Effingham	Washington
Fayette	Wayne
Henderson	Woodford
Henry	

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

A MESSAGE FROM THE PRESIDENT, MRS. WILLIAM RAIM

At the beginning of this new year for the Woman's Auxiliary to the Illinois State Medical Society I wish to extend greetings to members of the Auxiliary and, also, to all physicians' wives, whom we would like to count as members of our organization before the end of the year. The hope of the officers each year is to go forward and to add to the good work and accomplishments of past workers. As in the past this can only be done with the loyal support of every member of the Auxiliary. The officers and chairmen can formulate plans and outline the work, but without the cooperation of the members we cannot gain the results which we so heartily desire. When we realize that we are not a social group, but are organized for a definite promotional purpose we can readily understand the importance of this individual effort.

Heretofore, we have had as our definite aims Hygeia, legislative and public relations work. Last year a new project was added, the Benevolence Fund. This is just in its infancy, but the chairman is putting forth her best efforts and we hope to see this new project in workable order in the near future.

In my letter to the county presidents I urged them to formulate study groups in compliance with a resolution which was adopted at the National Convention in San Francisco. Here again you, as individuals, are needed to make this a 100 per cent success.

Another suggestion to the county presidents was to plan a regional meeting. Such a meeting would be a great source of inspiration and, if planned, I think you will find it very worthwhile to attend.

Plan to attend each meeting and provide a stimulus for bigger and better programs. In return you will be repaid by knowledge gained and the good fellowship of other physicians' wives.

(MRS. WILLIAM) HELEN RAIM,
President.

DR. KARL A. MEYER A CANDIDATE FOR MEMBER OF THE BOARD OF TRUSTEES, UNIVERSITY OF ILLINOIS

Dr. Karl A. Meyer, an alumnus of the University of Illinois, is a candidate for member of the Board of Trustees of his alma mater.

Dr. Meyer has served six years as member of the board of trustees and has received the endorsement of the alumni of the State University.

There are many medical problems that come before the board of trustees of the University and it is therefor well to have a medical man familiar with the problems of the medical profession represented in that august body. Dr. Meyer is the only physician nominated for this high office.

Dr. Meyer is a member of the Chicago and Illinois State Medical Societies and medical superintendent of the Cook County Hospital, he is also associate professor of surgery at Northwestern University.

THEY WENT TO THE MAYOS

In the *Voice of the People, Chicago Tribune,* September 20, appeared the following which is consistent and very much to the point.

Hammond, Ind. Sept. 16.—The article about the doctors in this morning's paper makes me wonder about socialized medicine and why this present administration wants it. Not long ago you published an article about the American Medical Association and a clinic in Washington. If there are competent physicians and surgeons on the staff of this clinic why should James Roosevelt go to the world renowed Mayo clinic, or don't the President and his family have confidence in the clinic in Washington? What is good for one is good for all. Let the government leave the medical profession alone and we will be all the better for it. It is the greatest profession next to the ministry.

Mrs. A. V. C.

ANNUAL MEETING INTERNATIONAL COLLEGE OF SURGEONS

The second annual assembly of the United States chapter of International College of Surgeons will be held at Philadelphia, Pa., October 13-14, 1938.

For full information address: Charles H. Arnold, M. D., Terminal Bldg., Lincoln, Neb.

DO YOU KNOW—

That diphtheria and smallpox which together caused the loss of half a million days from school are easily prevented by inoculation? Every child ought to be protected against these two diseases prior to entering school. This is the parents' responsibility! Such protection not only safeguards that child but all other children with whom he comes in contact.

Diabetes is a more common cause of death in the United States than in any other nation, a record which is blamed in part on rich food, lack of exercise, and nervous tension of life.

Original Articles

INTUSSUSCEPTION

PHILIP ROSENBLUM, M. D.
CHICAGO

Intussusception is essentially a pediatric disease and by far the commonest cause of intestinal obstruction in infants. It is one of the few diseases of childhood in which a few hours' delay in diagnosis may influence the prognosis so much. Once the diagnosis is made, the treatment, for all practical purposes, is usually surgical.

Intussusception may be ileocolic, ileo-ileal, ileocecal and colocolic, depending on the point of origin and the distance the intussusception has advanced. Probably many are ileo ileocolic, that is, starting in the ileum, and the terminal portion of the ileum passing into the cecum from a second leading point. Ascending, or retrograde intussusception occurs, probably, only just before death or at the time of death.

At Cook County Children's Hospital in the years 1935 to 1937 inclusive there were 23,500 admissions from all causes; of these 33 were intussusceptions—about one-eighth of one per cent. Of about 9,000 admissions to the Sarah Morris Children's Hospital in the last five and one-half years, 30 were intussusceptions—about one-third of one per cent.

The etiology of intussusception is not definitely known. The majority of cases occur in well-nourished infants; 75% under one year, males predominating more than two to one. In our series males predominated two and one-half to one.

A history of preceding intestinal disturbance or dietetic error was noted in only about 5% of the patients. In a very small group intestinal tumors such as cysts, Meckel's diverticula, neoplasms, worms, congenital bands or foreign bodies, or a tonsillectomy 48 hours before were noted; but in the majority of the cases there is usually no satisfactory cause to be found. No doubt, the production of intussusception is brought about by several factors. When one considers the rather bizarre movements and the length of the intestines, one realizes that the right mechanics must present themselves at the right time. Just as one may fall several feet and sustain no broken bones, yet, when the mechanics are right one may step from a curb six or eight inches high and break a leg or an arm; similar factors probably operate in intussusceptions. Certainly some basic factors are in operation because in a very small percentage intussusception occurs more than once in the same individual, and very rarely there is a history of more than one case in a family. However, I recall one family in which the diagnosis in one case did not surprise the mother because an older boy had also had an intusssusception. This same boy had a recurrence two years after his first operation.

It is known that the ileocecal valve in infants projects about three-eighths of an inch into the cecum and the terminal portion of the ileum is surrounded by a rich lymphatic supply. Due to various factors these structures become swollen; the projecting valve acts as an irritant and peristalsis increases. In the majority there is no satisfactory etiology. When intussusception occurs in older children some *intra-intestinal affection such as neoplasm, cysts, Meckel's diverticulum,* etc., must be looked for.

The local pathologic changes in intussusception are considerably different from those in other cases of acute intestinal obstruction. The original changes beginning as edema and extravasation of the blood may soon pass into necrosis and gangrene. The swelling is most marked at the apex and along the convexity of the intussusception. There is increased permeability of the intestinal wall to bacteria. Gangrene is much more likely to occur and occurs much earlier in the intussusceptum than in the intussuscepiens.

The *symptomatology* of intussusception is divided into acute, subacute and chronic varieties.

Varieties: The *acute* form is the most common and the symptoms are quite typical. The majority are in infants under two years of age, 75% under nine months. They usually occur in a perfectly healthy, well-nourished baby. The following story is typical of this group, and occurred in an infant that lived just across the street from me some years ago: The mother was holding her seven-month old baby (male) in her arms playing with it, and the baby was quite happy. All of a sudden he cried out, turned pale and drew up his legs. I was called immediately and found the child pale, his skin cold and rather clammy; the patient was in semi-

Read before Joint Session with Sections on Medicine, Surgery and Radiology, Illinois State Medical Society, Springfield, May 18, 1938.

shock. While I was examining the baby he vomited. Every few minutes he would cry out and draw up his legs. His temperature was subnormal. Palpation of the abdomen, which was soft (and usually is when seen early), disclosed a sausage-shaped mass in the right middle portion a little above the umbilicus and extending upward toward the left. This seemed tender when touched. However, tenderness is not a constant finding. Rectal examination disclosed feces in the rectum (this should not mislead the physician, as there is often feces below the intussusception), but the tip of the finger, on removal, showed a little blood-tinged mucus. With this classical syndrome one should never be in doubt as to the diagnosis. A barium enema carefully given may be used to confirm the diagnosis. However, this is seldom necessary in the acute form.

There is very seldom a history of preceding intestinal disturbance or other illness in acute intussusception. Not all cases, however, are of the same severity and one point that I wish to emphasize is that 10% do not show any blood either on digital examination or after an enema. I do not think this point is sufficiently appreciated by physicians, including pediatricians. Very rarely there may be no vomiting. The temperature is usually subnormal or normal when seen early. After the first 24 hours, depending on the severity, dehydration and complications, the temperature rises. Some feel that the prognosis is in proportion to the temperature; that is, a child seen first with 103 or 104 temperature offers a very poor prognosis, but this is not always true as infants may have fever from dehydration. This happened last February: A baby nine months old with acute intussusception, sick three days, 103 temperature; when operated on, the intestine was in good condition and the patient made an uneventful recovery. One thing to remember is that the symptoms may subside temporarily and the patient lie quietly in shock or semi-shock. Occasionally the patient's appearance belies the seriousness of the condition. This was brought out in a child admitted to the Cook County Hospital whom I saw with an intussusception protruding from the rectum, who did not appear very sick.

The white blood count varies from 8,000 to 12,000-14,000 in uncomplicated cases. X-ray with barium enema in the typical case is not necessary as a rule, but when in doubt is very helpful if carefully done. The difficulties of giving some babies a successful barium enema is appreciated when one has tried it himself. They often expel it as fast as it is given. The characteristic "U" shape barium picture is present. This shadow is produced by a small amount of the barium passing for a longer or shorter distance between the intussusceptum and the intussuscepiens. The shadow made by the thin layer is greatly different than that made by the dense mass of barium, so that the end of the column appears to be concave or "U" shaped. This was first demonstrated in a case of intussusception by Dr. F. X. Walls.[1] The ileocecal region is the most common location for the occurrence of intussusception; and it is fortunate that this region is readily accessible to roentgen rays.

In the subacute and chronic cases with partial obstruction the combination of a barium meal and a barium enema may be used. The barium meal will show an apparently markedly narrowed ascending colon. This is, in reality, the ileum invaginated in the colon. When the barium enema is then given, the colon itself will fill and the disproportion of the findings by enema and by barium meal will be the clue to the diagnosis.

Warning, too, must be given that as everywhere else in medicine, negative roentgen ray findings should not be accepted in the face of definite positive clinical signs, as patients have been operated on after a negative report and intussusception found.

In the *subacute* variety, that is, those cases that have symptoms for several days or a few weeks, the onset isn't as severe; the patient isn't in shock as a rule; also this type is more likely to occur in children more than one year of age. These cases are characterized by intermittent attacks of colicky pain associated with vomiting, usually constipation, occasionally small mucus stools, temperature normal or only slightly elevated. These patients groan in their sleep or are restless, due to pain. Palpation of the abdomen *discloses a tumor mass* usually at the middle of the abdomen extending to the left. Of course the location depends on the type and severity of the intussusception. I would like to emphasize the importance of accurately palpating the abdomen. If, as often happens, the patient is frightened

1. Walls, F. X.: A Case of Intussusception, N. York M. J., 153: 617, 1918.

or in pain, a one or two grain nembutol suppository, avertin or even ether anesthesia should be given, and preparation to operate should be made so that a thorough examination may be done when the abdomen is relaxed. This is not done as often as it should be, so that more accurate information can be obtained. A mass can be felt in practically all cases except the ileo-ileal variety.

Rectal examination may be of considerable aid to palpation of a tumor mass if the patient is relaxed. I prefer abdominal examination alone, first, as this is less frightening to the child.

Chronic intussusception, which is often overlooked, probably occurs more frequently than we realize. It is more common in children past one year of age. The story of abdominal symptoms extending from a few week to months should make one mindful of it. The story is quite suggestive. Symptoms usually are as follows: The patient has pain and vomits, and at the onset is quite sick; there is usually intermittent colicky pain; no blood in the stool as a rule; or the stool is only slightly streaked with blood. As time goes on the symptoms get less and less, vomiting occurs only at longer intervals, constipation is persistent and the patient loses weight. Occasionally there is constipation alternating with small mucus stools. There is usually no fever. On careful examination one can usually palpate a tumor mass varying in consistency from moment to moment during palpation. This suggests the diagnosis. Then there often is an unnatural emptiness in the right iliac fossa (Dance's sign). This form is frequently mistaken for appendicitis, chronic enteritis, enlarged kidney and the like. In every case a careful history and examination should be made to determine the presence of a characteristic movable tumor. The gaping of the rectum was pointed out years ago by Broca and others as a very important finding in this group. Roentgen examination is very valuable in these cases to confirm our suspicions. X-ray findings are quite typical. The "U" shape filling when properly done is quite characteristic.

The *diagnosis of acute intussusception* in the typical case is quite easy if one will take the time to inquire carefully into the history. Characteristic, is a sudden onset usually in a healthy baby under one year with intermittent colicky pain, vomiting, presence of shock, a palpable mass and blood or bloody mucus on rectal examination, with a normal or subnormal temperature if seen early. It is important to make the diagnosis early, as the prognosis usually is in proportion to the length of time it has been present.

The flaccidity of the abdominal wall and the absence of abdominal distention in most cases of intussusception is characteristic. Rectal tenesmus with an empty rectum is an important finding when present.

One thing that has helped me when called to see a baby in whom I suspect an acute abdominal condition is first to elicit a careful history; second, as the baby is likely to be in pain and frightened, to have the mother hold the baby in her arms and gently, but firmly, press the baby's abdomen to her bosom. If a baby has an ordinary "colic" he likes to be held this way, but if there is some morbid intra-abdominal condition he will cry and push away from his mother as she presses him to her. The doctor, in this way, can observe the baby's action before he starts to examine the child. Then, if one will gently, with warm hands flat on the baby's abdomen, examine it before one pulls out his stethoscope, otoscope and various paraphernalia, that "spots" him immediately, one can usually obtain all the necessary information without further trouble. Leave the rectal examination to the last because this is disagreeable to a baby. The abdomen is usually soft and not distended early, so that the *mass* can easily be felt.

If there is any doubt as to feeling a mass, I have found a nembutol suppository (one or two grains inserted at home) to be helpful. By the time the baby gets to the hospital there is sufficient relaxation to feel the abdomen. But should one still not be satisfied and the history suggests an intussusception, then ether should be given and the patient should be prepared for an operation if necessary. Sometimes the anesthetic alone will be sufficient to relieve the obstruction. One must not be misled by the absence of blood in the stools; this is often a late finding or never present.

In the *differential diagnosis* of acute intussusception we consider first *acute appendicitis:* Acute appendicitis does not occur as often in infants. There is usually an elevation of temperature and increase in leukocyte count early, with no palpable mass or blood in the stool. Rigidity and tenderness are also more marked.

Vomiting usually is not as severe, nor is there shock, and the pain is not as intermittent.

Bleeding Meckel's diverticulum occurs in infants under two years of age in the majority of cases. The story is of a painless hemorrhage of considerable degree, greater than one usually has in an intussusception. There is usually absence of a tumor, vomiting and visible signs of hemorrhage.

In *prolapse of the rectum* there is usually no associated pain or shocks. The rectum usually prolapses after bowel movement, and upon examination there is an absence of reduplications.

In an intussusception sufficient to produce this extrusion through the rectum, symptoms must have been present for two or more days and the patient's condition by this time is usually critical. Rectal prolapse can be replaced, and extends directly into the mucosa; if not the transitional fold is felt a little distance above the rectal orifice.

Dysentery may give some difficulty in diagnosis, but if a careful history is obtained one usually finds fever and constitutional symptoms at the onset, frequent stools and the general symptoms more pronounced from the start. There is an elevated white count early, and prostration. There is no palpable tumor. In intussusception blood is not usually mixed with stools as it is in enterocolitis.

Henoch's purpura occurs usually in older children. There is abdominal pain, but more general symptoms: fever, petechia on the body and elevated white count. Usually there is no palpable tumor. There is often joint swelling and pain. Constitutional symptoms in Henoch's purpura usually overshadow the abdominal symptoms.

Tumors of the rectum such as adenoma are very rare and occur more often in older children. They can be felt digitally in the rectum, bleed easily, and are often associated with mucus and blood in the stools. There is no mass in the abdomen.

Thrombosis of the splenic vein may follow infection through the umbilicus; this is very rare. The general symptoms such as fever, etc., are more marked. There is usually a history of a discharge from the navel.

Foreign bodies in the rectum are usually found in children past five years of age. Digital examination and x-ray will suffice usually for a correct diagnosis.

Chronic intussusception is very often difficult to diagnose. This form is frequently mistaken for appendicitis, chronic enteritis, enlarged kidney or tumor and the like. In every case, a careful history and examination should be made to determine the presence of a characteristic movable tumor. The gaping of the rectum may be a very important finding. Roentgen examination is important and will confirm the diagnosis.

Incarceration of a chronic intussusception is diagnosed by the increase in pain, more violent attacks of colic, blood and mucus stools; also persistent vomiting and marked general symptoms.

One must keep in mind the fact that two conditions may exist together as in the case of a boy six years of age whom I saw recently, and who, 48 hours previously had a tonsillectomy. The child complained of pain in the abdomen and vomiting, and on examination a mass was felt in the abdomen. An intussusception was confirmed by a barium enema, a slide of which I shall show.

TREATMENT

Prophylaxis. There is no known way to prevent intussusception. The treatment is essentially surgical, and the earlier the operation is performed after the onset the better the prognosis. Occasionally when a case is seen early, and if one has the opportunity to have the services of an expert roentgenologist, or he himself is qualified, a barium enema properly given may not only aid in the diagnosis but also be used to relieve the obstruction. However, one must be sure the barium has entered readily into the small intestine. Even then a very small piece of the intestine may be adherent and fail to unfold; this may be overlooked roentgenologically, or an ileo ileal colic intussusception may reduce to the ileum and then be overlooked. When the roentgenogram shows that the intussusception has been reduced, one must also be sure that all of the symptoms have been relieved.

The preoperative and postoperative care are very important and certainly should be under the direction of a pediatrician or other qualified person.

The importance of giving fluids before or after the operation, or both, cannot be stressed too strongly. The results of an operation depend

often on how thoroughly and carefully this is carried out. I have found the continuous intravenous drip convenient and practical, and less painful to the patient. The ankkle vein (saphena magna) is used after immobilizing the leg on a wooden splint. The saphena magna, just in front of the internal malleolus at the ankle, is entered very easily by dissection; an 18 to 20 gauge needle or spinal puncture needle, which has been made blunt, makes a good canula. Enough fluid in the form of five per cent glucose in normal saline or Ringer's solution can easily be given by this method to combat dehydration and acidosis; and if necessary citrated blood can be given when indicated without further trouble. 500 to 1,000 c.c. of fluid can easily be given with practically no pain to the patient, and I am sure this has been instrumental in reducing our mortality in all surgical conditions in childhood.

Breast milk or other milk by mouth may be given to infants in very small quantities after six or eight hours, gradually increased, with water and weak tea in small quantities between milk feedings. Often in 24 to 48 hours after the operation the patient can be given sufficient fluid and food by mouth. These babies should be protected from individuals with acute infections, and also unnecessary chilling. Within five to seven days the average patient, who has been seen in time, is ready to leave the hospital.

SUMMARY

1. Intussusception is essentially a pediatric disease.

2. The earlier the diagnosis, the better the prognosis.

3. The symptoms in the acute variety are sudden onset in infants usually under one year, intermittent colicky pain, vomiting, a palpable mass and blood in the stool.

4. Two to one in males.

5. 75 per cent under one year.

6. 10 per cent of intussusceptions show no blood in stool.

7. Usually a mass can be felt. If necessary, give some anesthetic or analgesic.

8. Roentgen ray examination is very helpful, especially in the subacute and chronic types.

9. The importance of postoperative care; such as supplying fluids is most essential,

SOME PHARMACOLOGICAL CONSIDERATIONS OF INTESTINAL OBSTRUCTION

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There are several aspects to the problem of acute intestinal obstruction that present questions of interest to the pharmacologist. First in importance is the question of the toxemia that may or may not be present. Through the work of a number of investigators it has come to be fairly well recognized that in simple obstructions, namely obstructions without strangulation or marked distention, and particularly if they are in the upper intestine, toxemia can be largely excluded, or rather other factors can be shown to be sufficiently concerned in accounting for all the symptoms and laboratory findings that it is unnecessary to consider a toxemia as important. With the development of complications such as strangulation or even severe distension without strangulation, toxemia cannot be so easily excluded, and there is much in the way of circumstantial evidence from the laboratory and the clinic indicating that the absorption of some toxic principle or principles may be added to the harmful effects seen with simple obstructions. Of the many kinds of such circumstantial evidence I shall mention only one. McIver and White showed in 1929 that if a strangulated loop of intestine is exteriorized the onset of symptoms, as well as death, is delayed as compared with the course of events when a similar strangulated loop is left within the abdomen. There is a clinical parallel to this in the reports that an internal strangulation becomes more rapidly serious than a corresponding strangulation in an inguinal hernia. Other workers have shown in experimental animals that if a strangulated loop is enclosed within a rubber bag the onset of symptoms is again delayed just as when such a loop is exteriorized. There is thus circumstantial evidence that a transperitoneal absorption of toxic material from the bowel can occur even when it is not ruptured. There is also circumstantial evidence of the mesenteric absorption of toxic material under certain circumstances. Di-

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rect proof has thus far been lacking. This would consist of first detecting and identifying some toxic principle or principles in the circulation and secondly demonstrating that there is an adequate amount of such toxic substance to play a definite role in the symptomatology. We have had some success in our laboratory in demonstrating that a toxic substance, i. e., histamine, is concerned in the phenomena of acute anaphylactic shock in the dog, and since the toxic principles possibly concerned in intestinal obstruction have been suggested as being of this type, we have made a number of studies in cases of acute strangulation obstruction. We have failed thus far to detect any toxic substances in either the thoracic duct lymph or circulating blood in obstructed animals. We have learned, however, from our experiments in anaphylaxis that unless the intoxication is very sudden as well as overwhelming, the likelihood of directly detecting the toxic material in the blood stream is very limited because of the very rapid rate of its disappearance from the circulating blood. Consequently such negative tests do not exclude the possibility of a toxemia. They suggest, however, that a toxemia is not the single dominant factor.

Amongst the other factors suggested as operating in cases of obstruction are dehydration and loss of electrolytes from the blood, interference with the circulation, and some unexplained nervous factors. The question of dehydration and loss of electrolytes is being discussed by others on this program. I have not been impressed with the possibility of certain obscure nervous factors playing any role except as nervous mechanisms may contribute to the operation of the other factors mentioned. Mechanical interference with the circulation seems to me to be a quite important factor. If the intestinal tract of animals is distended from pylorus to anus with a relatively unabsorable gas such as nitrogen, the animals die in from 8 to 12 hours. If the portal vein of animals is ligated they die in from 6 to 10 hours. Even extremely severe distention, such as would prevent all flow of blood through the bowel wall, does not completely stop the flow of blood through the mesenteric vessels because there are anastomotic channels near the mesenteric attachment of the intestine which permit some flow. Nevertheless the similarity between the results of the two experimental procedures is quite striking. Most surgeons have occasionally witnessed an astonishingly prompt improvement in the general condition of certain patients following the relief of severe distention by an enterostomy. Although subsequently such patients do not necessarily go on to complete recovery, I know of no other adequate explanation for this prompt improvement in symptoms than such a restoration of the general circulation as undoubtedly follows this relief of the distention. As contributory evidence to this belief are the clinical reports that in patients with general peritonitis a fall in the systemic blood pressure often accompanies the development of marked meteorism.

The action of various drugs and of morphine in particular upon the intestine is of considerable interest. There is a paralytic ileus accompanying peritonitis and a paralytic ileus is frequently superimposed upon a mechanical ileus after the latter has persisted for a short time. There is a good reason to believe that the ileus is initially reflex in character as splanchnic or spinal anesthesia usually restores peristaltic activity. The paralyzed bowel responds apparently normally to stimulating drugs until gaseous distention and the resultant circulatory impairment damage the intestinal muscle. This has been experimentally demonstrated for a number of drugs and is probably true generally. The widespread use and general employment of morphine warrants special attention to its action. Alonzo Clark in 1879 was an advocate of deep morphinazation in the treatment of peritonitis and advised a semi-narcosis to insure, as he thought, a complete bowel rest. He gives credit to Graves in 1821 as the first to use clinically large doses of opiate in the treatment of peritonitis, and to Stokes in 1832 for the first publication on the subject. It came to be called the Alonzo Clark treatment, however, and modifications of his regime constituted the accepted therapy for many years as shown by the textbooks and publications of Austin Flint, Nothnagel, Kelly, Senn and many others. This type of therapy came in time to be challenged by a number of clinicians, not on the basis of observed therapeutic results, but rather on the notion that the drug-induced ileus was a two edged sword, splinting the bowel to restrict the spread of infection on the one hand, but intensifying the toxemia specifically related to the ileus on the other. Although numerous experimental studies of the action of morphine upon the intestine had been made, conflicting results

had been obtained so that in spite of the fact that Pal's studies in 1900 indicated that morphine had a stimulating action on the intestine, the well-recognized constipating action of morphine served largely to nullify such findings and to strengthen the belief that morphine was essentially depressant. It was not until 1926 that the work of Plant and Miller clearly showed that both in man and animals the characteristic effect is to increase motility. That the action of morphine is stimulant rather than depressant to the intestinal musculature is now generally recognized as Plant and Miller's observations have been confirmed by numerous workers, both for the normal intestine and when obstruction or peritonitis are present. An interesting and recent illustration of this smooth muscle stimulant action is presented in the observations of Walters and his coworkers on the ability of morphine to provoke an attack of biliary colic in certain patients after cholecystectomy.

Assuming a non-specific beneficial effect of the morphine regime it is interesting to note the changing conceptions of the mechanism whereby this is brought about. The initial interpretation, and it has by no means disappeared, was that morphine was beneficial by splinting the bowel, suppressing all peristaltic activity and thus preventing the spread of infection and favoring the localization of the process. With the recognition that morphine does not splint the bowel came the suggestion that it helped to overcome the effects of the ileus secondary to the peritonitis, by encouraging the transport of a toxic bowel content from the highly absorptive small intestine to the less absorptive colon. This is not the only way in which it could act and there is also some evidence that the motility induced by morphine is not effective in the transport of bowel content. The circulation through the bowel wall is greatly facilitated by the contractions and motility of the intestine. Conversely it is decreased in the paretic intestine and of course still further decreased by distention. I believe the indirect effect of morphine of improving the circulation through the bowel by promoting tone and motility in the intestine is the probable reason for whatever beneficial effect it may have in peritonitis.

I believe from what I have said that there is considerable justification for a pharmacologist being interested in what is chiefly a surgeon's problem.

(ILEUS) INTESTINAL OBSTRUCTION

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Ileus is a symptom-complex characterized by pain, vomiting, tympanities and obstipation. Some of these symptoms may be absent due to the site and type of the obstruction.

The process is a progressively developing, pathological entity which may be slow or rapid depending on the location and completeness of the obstruction.[1] Ileus is the end result or complication of all neglected cases of intestinal obstruction of a mechanical nature.

Of the many classifications of ileus, the one offered several years ago by Dr. Dean Lewis[2] is simple and satisfactory. I will therefore take the liberty of quoting it here.

Ileus may be divided into:

1. *Mechanical Ileus* in which there is a definite mechanical obstruction to the lumen of the bowel, such as occurs in carcinoma, bands, volvulus, intussusception, foreign bodies in the lumen, etc.

2. *Strangulation Ileus* in which the vessels are involved as in embolism or thrombosis. Any mechanical type becomes this type when the blood supply is interfered with. Paralytic types of ileus may likewise present similar pictures when the vessels become involved.

3. *Adynamic Ileus* in which the musculature of the bowel wall is paralyzed, as in peritonitis, torsion of the pedicle of ovarian cysts and fibroids, epididymitis, gallstone and renal colic, and reflexly with pneumonia and pleurisy.

4. *Dynamic Ileus* in which the musculature of the bowel wall is contracted, as in lead and some other poisonings, and in diseases of the central nervous system such as locomotor ataxia.

On account of time this paper will be limited to the discussion of the mechanical and adynamic types of ileus.

Intestinal obstruction, in spite of our better present day methods of diagnosis and treatment, continues to be one of the most deadly of all intestinal conditions and causes about the same

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mortality that it did two if not three decades ago. The majority of untreated cases of mechanical obstruction, sooner or later develop interference with the blood supply, and unless promptly relieved, will go on to a fatal termination. It is therefore vitally necessary to recognize this condition early and to differentiate between the simple mechanical and strangulation types, because when strangulation supervenes, an associated toxicity develops which increases rapidly and causes an early death.[3, 4, 5]

In ileus as Oschner[6] states, the normal function of the bowel, consisting of peristalsis, secretion and absorption, become so altered that the life of the individual soon becomes endangered.

Following mechanical interference definite pathological changes take place in a definite ratio to the completeness of the obstruction. All writers agree that the contents of the bowel above the obstruction is toxic and that the higher the obstruction the greater will be the absorption of this toxic substance.

In high obstructions the symptoms are therefore more acute.[7] Dehydration is also greater. It is correspondingly true that the more distal the obstruction occurs the less severe will be the symptoms and the longer the length of survival, other things being equal. In high obstructions there is an associated loss of the secretory intestinal juices which is very important.

Obstructions relieved before interference with the blood supply of the bowel takes place show a five per cent mortality. After strangulation has occurred the mortality rapidly mounts and varies in different reports from 30 to 70%.[8, 9, 10] Unless strangulation is relieved within 48 hours after its onset the death rate will reach practically 100%.

The length of the strangulated loop is also an important factor. Brooks[7] states that the shorter the strangulated loop the more rapid are the onset of the symptoms and the more fatal the outcome. This is conceded by other writers.[11] When the strangulated loop of intestine is of sufficient length it is possible that death may occur from the sudden withdrawal of blood from the circulation.[11] Perthes, however, feels that death does not result from shock, but from an associated autointoxication of some kind.

In intestinal obstruction certain chemical, anatomic and bacterial changes take place when the blood supply to the bowel becomes involved. These changes are most rapid when the blood supply becomes completely shut off. Stout[1] feels that at the time obstruction occurs a specific toxin is formed with an associated disturbance of the water, gas and sodium chloride exchange through the intestinal mucosa, which is due to the circulatory deficiency of that tissue. Matthaes[12] attributes the excessive thirst of these patients to this sodium chloride impoverishment.

Theories of Toxin Formation

The exact nature of this toxin still remains undertermined. Lewis[2] feels it is similar to that found in moist gangrene. The late Jeff. Miller[13] compared it to the toxin of gas gangrene. Shier[14] feels it results from some protean decomposition plus bacterial action. Others are of the opinion that it follows some associated action of the pancreatic juices.[15] As far as the toxemia is concerned there is a close similarity between high obstructions and acute hemorrhagic pancreatitis. Brooks[7] states that Shonebauer, by experimental introduction of trypsin and bacteria into the peritoneal cavities of animals, was able to produce death in these animals, similar to that of acute obstruction.

Oschner,[6] Stone[16] and Angle[9] note the similarity of this toxin to adrenalin. Draper[17] feels it is a normal product of the duodenum which, under normal conditions, is detoxified at lower levels; that following obstruction this change does not take place and death results from the absorption of the unchanged toxin. Ellis[18] has demonstrated the toxin in the bowel lumen of fasting animals after three or four hours. Scudder, Zweiner and Whipple[19] have noted that adrenal insufficiency and intestinal obstruction have many features in common. In both there is a disturbance in potassium metabolism, and in their experimental work they report a rise in the blood potassium following obstruction to lethal levels.

Davis and Stone[20] have found that the normal contents of the intestine develops no toxicity as long as bacterial action is eliminated, and that bacterial action will become marked as soon as the blood supply is interfered with.

While the exact nature of this toxin still remains elusive and undetermined all writers are agreed that it does exist and that it becomes most marked following impairment of the bowel circulation.[11, 16, 21, 22]

It may therefore be concluded that strangula-

tion is predominantly a matter of toxemia;[6, 23, 24, 25] that the higher the obstruction the more acute it becomes, the more rapid is its course, and the more fatal its termination.[7, 26]

When strangulation occurs, definite changes take place in the bowel wall due to interference with the blood supply. Similar changes will take place from pressure following bowel distention.[16] Distention is less marked in small than in large bowel obstructions, due to the difference in arrangement of the mucosal folds and circular fibres of the colon and small bowel walls.

The bowel proximal to the obstruction becomes first pink in color, later a dusky red and finally black or grey and gangrenous. The peritoneum covering the bowel becomes grey and loses its lustre. Fluid accumulates rapidly, stagnates and therefore becomes lost to the body. This results in a marked dehydration.

It is estimated that the fluid normally secreted into the upper intestinal tract, via the mucosa of the bowel, liver and pancreas will, in twenty-four hours, equal the total volume of the blood and lymph of the body. Under normal conditions this is absorbed at lower levels.

Gatch and Culbertson[27a] have found that distention sufficient to arrest the circulation of the bowel wall will upset the selective absorption of the mucosa in from five to fifteen hours. As the mucosa becomes devitalized the contents of the strangulated loop becomes very toxic and anaerobes, chiefly the B. Welchii, become dominant.[16]

The toxin probably enters the general circulatory system via the lymphatics of the mesentery and through the thoracic duct. Donaldson[24] has found that the lymphatics of the mesentery remain open for days after venous thrombosis has occurred. When the toxin reaches the general circulatory system certain constitutional symptoms follow. There is an impairment of the central nervous system; a toxic nephritis occurs from kidney damage; the pancreas becomes acutely congested[7] and an adrenal insufficiency develops.[6]

Locally with the disappearance of the "vital function" of the bowel wall pathological organisms may reach the peritoneal cavity. In this event a general inflammatory reaction will occur. Whether peritonitis or perforation will supervene will depend upon the location of the obstruction, the time factor and the virulence of the toxemia.

Stout[1] sums up the pathology of strangulation as a specific toxin with a disturbance of the water, gas and sodium chloride exchange through the gastro-intestinal mucosa caused by a circulatory deficiency of that tissue. It is a disorganization and impairment of the motor function of the gastro-intestinal tract with subsequent changes and a peculiar type of toxemia.

Mortality of Ileus. The mortality rate in ileus as given by different reports still varies between 40% and 70%. It is very high under one year of age and over 50. It correspondingly increases after 50 in a direct ratio to the age of the patient. Obstructions of the duodenum at a place just below the openings of the pancreatic and common bile ducts cause the most acute symptoms and the earliest death. The length of survival becomes greater the more distal the condition occurs from this location.[7]

If subsequent intestinal paralysis persists, due to prolonged stretching of the bowel wall, the patient will die even though the obstruction is relieved.[8]

If sufficient time has elapsed before surgical relief for marked damage to the bowel wall to take place, and for systemic effects to manifest themselves, no treatment will prevent a fatal termination. When strangulation supervenes death will occur in a direct ratio to the amount of bowel damage because this damage will regulate the amount of the associated toxemia. In cases of arterial thrombosis death often occurs in from eight to 18 hours. Unrelieved obstruction will cause death in practically all cases.

The greatest cause of this high death rate is delay in treatment. It is estimated that 90% of these patients could be saved if they were operated on within the first six hours.

Symptoms of Ileus

The symptoms of ileus depends on the site and type of the obstruction. When obstruction is incomplete the symptoms progress slowly and intermittently. When complete obstruction occurs the symptoms are constant and profound. As McCormick[27] states, "to combat this problem more successfully, one should become ileus conscious and should not wait until the old classic textbook picture of regurgitant vomiting, general abdominal distention and prostration are present." These symptoms, as Wangensteen[28, 29] has so aptly stressed,

usually spell the beginning of the end and should therefore be labeled ante mortem instead of diagnostic signs. Regurgitant vomiting and distention are too often hopelessly terminal symptoms.

In cases of early intestinal obstruction the temperature, respiratory rate and pulse are normal. The leucocyte count is also normal unless vomiting has been marked.

Blood chemistry changes, such as depletion of the chlorides, elevation of the blood urea and alkalosis, are all late symptoms and, as a rule, do not manifest themselves until after 48 hours. In some colon obstructions they do not appear at all.

Intermittent, crampy abdominal pain with nausea and considerable vomiting, without abdominal rigidity or tenderness should be strongly suspicious of intestinal obstruction. If pain and vomiting continue after the bowel has been emptied by enemata, the suspicion is more conclusive. If loud intestinal noises are heard on auscultation and a flat x-ray picture shows gas accumulations in the small bowel, the diagnosis of mechanical obstruction should be complete.

In the more acute obstructions pain is sudden in onset and is as a rule severe.[30] It is usually localized above and to the left of the umbilicus in small bowel obstructions and below and to the left in large bowel obstruction.[31] However, it may occur elsewhere. Later when the pain becomes more or less generalized and continuous, it usually signifies that the bowel lumen has been completely blocked.

Vomiting generally follows pain but in some of the Cook County cases it preceded it. The vomitus at first consists of gastric contents, later of intestinal material and finally it becomes feculent in type.

Tenderness is absent in early obstruction and when present generally means that peritonitis has already developed.

Rigidity is always a late symptom.

Distention is a rather late symptom and is always much greater in large than in small bowel obstructions.

Pulse, Temperature and Respirations. These are not involved early. Rapid shallow respirations, a quick small pulse and an elevated or subnormal temperature are always ominous, and are usually definite proof of a severe existing toxemia resulting from marked bowel damage.

X-Ray Examination. Plates should be taken in the prone and upright positions. If the erect position is impossible on account of the patient's condition, lateral exposures should be made. An enema should always precede this examination to clear the bowel below the obstruction of gases and fecal material. Much improvement in diagnosis from an x-ray standpoint may result from the work of Abbott and Johnson[32] with their use of dilute barium solutions given through the Wangensteen tube.

Adynamic Ileus

Ochsner and Gage[6, 33] state that most cases of ileus developing 24 to 48 hours postoperatively are adynamic in type. This type results from peritoneal or splanchnic irritation which may be chemical, thermal or bacterial in nature.

Adynamic ileus is almost always associated with peritonitis.

Here, as in the mechanical types, intestinal secretions increase, the bowel becomes distended, absorption is lessened and toxemia develops. However, in this type of ileus the pain is dull in character and is continuous. It is not the colicky type of pain found in the early mechanical types.

Auscultation is most important because in the adynamic type, as in peritonitis, there is the silent abdomen with complete absence of all peristaltic sounds, instead of the turbulent, gurgling bowel noises such as one hears in the mechanical types.

In adynamic ileus the paralytic obstruction generally involves the entire intestinal canal.

Fey and Cubbins[34] feel that at times only a segment of the bowel may be so affected. It is possible that in some instances of slight involvement this may be true.

In the differential diagnosis it is necessary to remember that distention, dilation of the stomach, dehydration due to loss of absorption, and alkalosis, may develop in both types. The passage of flatulence and feces may follow enemas in both types. Chills may be present in the adynamic but not in the mechanical type.

When peritonitis develops there is temperature, constant pain and leucocytosis.[6,31]

It is most important that we differentiate between these two types because in the mechanical form early surgery offers the only help, while in adynamic ileus, with or without peritonitis, stomach and duodenal drainage as advocated by Wangensteen will generally suffice.

Large Bowel Obstructions

Large and small bowel obstructions are separate conditions, both clinically and pathologically.[14, 85]

When obstruction occurs in the colon the picture is entirely different, this being due to several causes. The large bowel, on account of its peculiar construction, has the power to dilate to a remarkable degree. Regardless of where the colonic obstruction occurs the ileocecal valve, as DeCourcy[36] states, acts as a powerful check and will prevent regurgitation into the small bowel.

Dehydration is absent or is much less marked because the fluids in the small bowel can still be absorbed at lower levels. Toxicity is also less for this same reason. Vomiting is absent or is a very late symptom. Strangulation very seldom occurs in large bowel obstructions except in cases of volvulus of the cecum or sigmoid; where a portion of the bowel becomes strangulated in a hernial sac or where rarely a carcinoma may invade the mesentery and from pressure obstruct the vessels.

The colon, however, does suffer from interference with the blood supply to its walls caused by the distention. It is remarkable, when one considers the force applied to the ileocecal region from pressure, that rupture does not occur more often.

CONCLUSIONS

1. Ileus still continues to be one of the most deadly of all abdominal conditions.

2. It is a very frequent, if not the most common cause of postoperative abdominal complications.

3. This deplorable situation can only be improved by becoming ileus conscious, which will result in earlier diagnosis, earlier recognition of types and the earlier institution of treatment.

4. Until this takes place, and the patient, by means of popular medical education is also made to realize the danger of delay, no better end results may be expected

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SOME PHYSIOLOGICAL PRINCIPLES INVOLVED IN ACUTE INTESTINAL OBSTRUCTION

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Knowledge concerning the pathogenesis of intestinal obstruction has been greatly amplified by a number of recent experimental and clinical studies. These have served not only to increase our understanding of the normal physiology of the gastro-intestinal tract and of the sequence of events that follows upon interference with the onward passage of the intestinal current but have contributed very strikingly and successfully to the practical treatment of patients. However, while this is true, the divergence of opinion among careful students of the disease is still so great that, while some ascribe all of the ill effects to an intoxication from the obstructed intestine, others deny that a toxemia exists and believe that the loss of water and salts from the body can account for the entire symptom-complex and lethal issue. It is probable that this difference of opinion has in many cases led to delay in the institution of proper treatment, has brought into undue prominence some of the associated but less important factors in pathogenesis, and in these ways prevented that decrease in mortality which our increasing knowledge of the disease should have made possible. It is a regret to me that time and the nature of this paper do not permit an analysis of the really vast literature that has accumulated on this important topic. I have chosen to restrict my discussion to two major pathogenic factors in this disease that seem to have been established and to illustrate these points by the description of certain of my own experiments, which in many cases simply confirm work done previously by others with different methods.

It has long been known that the upper part of the gastro-intestinal tract is chiefly secretory in function whereas the lower part is mainly absorptive. Stated somewhat differently so far as the passage of water and inorganic salts between the blood plasma and the lumen of the intestine is concerned, the drift is predominantly

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toward the digestive tract in the stomach, duodenum, and jejunum and toward the blood plasma in the ileum and colon. A given quantity of physiological salt solution placed in an isolated segment of the duodenum or jejunum can be recovered quantitatively several hours later, while if placed in the ileum or colon it will be largely absorbed. It is a matter of common observation that the water and inorganic salts which make up the bulk of the digestive secretions entering the alimentary tract are completely reabsorbed since under normal conditions but little water is lost in the feces. It is obvious that for this reabsorption to take place the various secretions must be carried by the motor activities of the intestine into the ileum and colon, and it is equally clear that when complete obstruction occurs in the upper intestine the water and salts will not reach the absorbing mucosa and are consequently lost to the body either through vomiting or accumulation in the non-absorbing regions of the digestive tract. Does this failure of reabsorption of any one or all of the digestive secretions account for the systemic disorder present in obstruction? Is there a toxemia present due to the absorption of poisonous materials from the obstructed intestine? These are, broadly speaking, the two important questions in the pathogenesis of acute intestinal obstruction. The experimental evidence and analysis to be presented here proves to our mind that the continued uncomplicated loss of certain of the digestive secretions from the body does cause adverse symptoms and death with changes in the blood chemistry similar to those occurring in clinical cases of acute intestinal obstruction. It is further demonstrated that under certain conditions in which an increase in tension within segments of intestine is permitted to develop, a toxemia occurs due to the absorption of poisons from the distended segment. This toxemia is also accompanied by characteristic changes in the blood chemistry. Furthermore, there is considerable evidence which indicates that the toxic materials absorbed from the intestine under these conditions increase the outpouring of fluids from the digestive gland into the upper intestinal tract, where but little reabsorption takes place.

The Total Loss of Gastric Juice from the Body. Complete obstruction at the pylorus in the dog, cat, rabbit, or monkey causes death within three to four days. There occurs an increase in the carbon dioxide combining power of the blood plasma, a fall in the blood chlorides, and a rise in the non-protein and urea nitrogen (MacCallum, Lintz, Vermilye, Leggett and Boas 1920,[1] Hastings, Murray, and Murray 1921,[2] Haden and Orr 1923,[3] and Gamble and Ross 1925[4]). These animals, with the exception of the rabbit, vomit repeatedly and their death has been attributed to the extensive loss of the various constituents of the gastric juice. The rabbit, which does not vomit, dies within a short time, and there is found in the dilated stomach a large amount of water, fixed base, and chloride ion (Gamble and McIver 1925[5]). The continued excretion from the body by the gastric glands of large amounts of water, hydrochloric acid and, as Gamble has pointed out, of sodium ion can account satisfactorily for the fall in blood chlorides, the increase in carbon dioxide combining power of the blood plasma, and the dehydration. Such a theory necessarily assumes that the gastric glands can separate the elements for their secretion (chiefly hydrochloric acid) from the blood plasma when the chloride concentration of the latter is less than normal and an alkalosis exists. It furthermore assumes that these glands can continue this separation until the blood becomes so abnormal that life cannot exist. The mechanism for maintaining a constant composition of the blood, upon which life depends, would then be subordinate to the mechanism for providing gastric juice. That this unique assumption is essentially correct is strikingly illustrated by an experiment reported a number of years ago (L. R. Dragstedt and Ellis 1930[6]). The entire stomach of dogs, with its secretory innervation and blood supply remaining intact, was isolated from continuity with the alimentary tract as illustrated in Fig. 1. After such an operation it is clear that all of the gastric secretion will be permanently drained away. Food passes directly from the esophagus into the upper end of the duodenum. The stomach, isolated in this manner, secretes an extraordinarily large amount of gastric juice (600 to 2600 cc. per 24 hours) of high acidity (0.35 to 0.45 per cent. HCl) and pepsin strength. Its secretory function is probably not greatly below the normal. The nervous or reflex phase of gastric secretion, depending upon the sight, smell, and taste of food, is not interfered with, nor is the chemical

phase, at least that part of it brought forth by the presence of food in the intestine.

Accompanying this secretion there occurs a profound change in the blood chemistry, an exaggeration of the alkaline tide observed after eating. These changes are illustrated by the data in Table I taken from one of the experiments. There is a profound fall in the concentration of blood chloride, an increase in the carbon dioxide combining power of the plasma, a shift in the pH toward the alkaline side, and a late increase in non-protein and urea nitrogen. The animal recovers promptly from the immediate effects of the operation and for two or three days may appear in good condition. Finely ground lean meat and water are supplied ad libitum and are taken in small amounts at frequent intervals during the day and night. The stools are formed and undigested meat particles are not commonly seen. From the time of the operation, however, the dog loses weight steadily. After two or three days an anorexia appears, he refuses food and water and becomes progressively more weak and depressed. The tissues seem to melt away, the weight loss in 24 hours ranging from one-tenth to one-twentieth of the total body weight. And yet during this period large volumes of highly acid gastric juice are constantly secreted by the isolated stomach. Death occurs to the weakened, greatly emaciated animal in five to eight days. The picture is that of profound depression. The changes in the blood chemistry are roughly proportionate to the severity of the symptoms, and both are without question due to the removal or loss of gastric juice.

The Total Loss of Pancreatic Juice from the Body. Many experiments involving the partial or complete loss of pancreatic juice from the body have been done since De Graaf first made an external fistula of the major pancreatic duct of the dog. The types of fistula commonly employed produced only a partial loss of the pancreatic juice, and the gradual loss of weight that ensued was uniformly attributed to the disturbance in digestion caused by the absence of an important digestive secretion from the alimentary tract. That the total loss of pancreatic juice produces a fatal effect was first clearly demonstrated by Elman and McCaughan (1927)[7] and is especially well illustrated by a new type of pancreatic fistula devised in our laboratory several years ago (Figure 2).[8] The method consists essentially in preparing an isolated sac of that portion of the duodenum which receives the pancreatic ducts and in leading the juices to the exterior by means of a gold plated cannula similar to that used in the isolated stomach. The volume of pancreatic juice collected from such a preparation varies from 500 to 1700 cc. per 24 hours. It is estimated that 10 to 50 cc. of this represents the secretions from the mucosa of the duodenal sac since this amount may be secured from a similar isolated segment which does not receive the pancreatic ducts. This large volume of secretion probably represents the normal output of the pancreas and it is evident that most estimates of the normal volume of pancreatic as well as gastric juice are far too low. Accompanying this secretion, there occurs a characteristic change in the chemistry of the blood, in some respects opposite to that following the loss of gastric juice. There is a decided decrease in the concentration of fixed base (155 to 130 m.m.), to a lesser extent a decrease in chloride (101 to 84 m.m.), a marked decrease in HCO_3 from 23.0 to 8.5 m.m., and a shift in the pH toward the acid side (7.35 to 6.95). The animals lose weight steadily and progressively and become rapidly weak and depressed. Death occurs within three to six days or the animals become so moribund in that time that it is read-

TABLE I

TABLE SHOWING THE EFFECT OF TOTAL LOSS OF GASTRIC JUICE ON BLOOD CHEMISTRY

			Gastric Juice						Blood Chemistry	
	NPN	Urea N	Vol.	% Free	% Total		Total		Cl	CO_2
pH	mg.	mg.	cc.	HCl	HCl	% Cl	Cl	Days Remarks	mg.	cc.
7.30	27	13	...				...	1 Normal Control	298	41
7.57	39	20	815	0.478	0.515	0.57	4.56	47 Condition Good	266	70
7.63	52	29	415	0.471	0.500	0.52	2.15	48 Condition Good	208	97
7.70	80	49	260	0.400	0.455	0.495	1.28	49 Depression +	183	108
7.95	90	55	122	0.330	0.496	0.467	0.57	50 Depression + +	177	114
7.73	109	78	250	0.354	0.420	0.531	1.33	51 Depression + + +	110	120
...	40	22	832	0.354	0.400	0.497	4.10	58 2000 Ringers daily for 7 days	227	65

ily apparent they will shortly die. The striking changes are severe tissue dehydration and acidosis, and the clinical picture that of depression.

The Total Loss of Bile and Succus Entericus from the Body. It seems clear that both man and the lower animals can withstand the total loss of bile, draining away by a biliary fistula, for relatively long periods. The symptoms that ensue are referable to the disturbance in digestion due to the absence of bile in the intestine and to a much less extent to the loss of substances excreted in the bile. Even here it is likely that of the substances lost, the bile salts are of greater significance than the inorganic elements since to a certain extent the further elaboration of bile is dependent upon the reabsorption of bile salts in the intestine. A complete biliary fistula after removal of the gall bladder should result in a greater loss of chloride than when the gall bladder is present, owing to the capacity of the mucosa of the latter to reabsorb this element. In either case the total disturbance is of a chronic nature and does not present the catastrophic features seen when complete loss of pancreatic juice or gastric juice occurs.

It has long been known that the continued loss of the secretions of the mucosa of the jejunum, ileum or colon, may be compatible with normal health for long periods. Fistulae of the type described by Thiry and Vella, using longer or shorter areas of these parts of the intestine and in which the succus entericus has been drained away, have been made by many investigators and no particular ill effects observed. The work of Herrin and Meek[9] however indicates that when the intestine is distended, as commonly occurs in obstruction, the secretion of succus entericus may become so augmented that appreciable losses of electrolyte occur even to the extent of causing death.

The experimental evidence available at present, of which this detailed above forms only a part, proves quite conclusively that the stomach and pancreas and under certain conditions the intestinal mucosa, can separate chloride and sodium from the blood plasma until the concentration of these elements in the blood becomes so reduced and the chemical structure of the blood so altered that death results. Such an effect is produced not only in acute intestinal obstruction but also in other conditions in which these digestive secretions fail to reach the absorbing mucosa of the lower intestine. The progressive loss of sodium and chloride ion reduces the capacity of the body to hold water and a dehydration often very severe is produced. The greater importance of the sodium ion in this effect has been demonstrated by the work of Gamble. After four or five days total loss of gastric or pancreatic juice, the dehydration of the tissues is extreme, as evidenced by the large loss of body weight (one-fifth to one-third of the total), the loss of tissue turgor, the shrunken eyeballs, and general emaciation. It is remarkable that such an animal does not attempt to replace the lost fluid by drinking, since he has at all times free access to unlimited amounts of water. Apparently thirst is related not so much to actual dehydration as to a disproportion between the total amount of water and dissolved electrolytes in the body. Furthermore, water alone given by stomach tube or as 5% glucose solution given intravenously, will not relieve the dehydration. It is immediately excreted in the urine.

If, when it is apparent that the animal is soon to die from the continued loss of gastric or pancreatic juice, it is given 0.9% NaCl or Ringer's solution intravenously in adequate amounts, it promptly recovers, begins to eat and drink in normal fashion, and the blood chemistry returns toward normal values. By the daily intravenous injection of from 2,000 to 3,000 cc. of Ringer's solution we have been able to keep such animals alive for eight months. Apparently, then, the essential substances removed in these juices are contained in NaCl solution. The inefficacy of water alone indicates the importance of the Na and Cl ions. The intravenous salt solution not only corrects the abnormal changes in the blood chemistry but it likewise relieves the tissue dehydration.

Loss of weight is prevented by such injections or, if it has already occurred, may be replaced. This clearly indicates that the ability of the body to hold water depends in large part upon its content of electrolytes.

Thus far attention has been directed only to the loss of electrolytes and accompanying water from the vascular spaces in obstruction. When, however, extensive vascular damage to the obstructed intestine occurs as in some cases of strangulation, volvulus, or where large vessels

become thrombosed, a loss of plasma protein into the lumen of the intestine or peritoneal cavity takes place. The clinical symptoms are those of severe pain, early prostration, and vascular collapse—the picture is that of surgical shock, as emphasized by Foster and Hausler.[10] The situation very closely resembles that produced experimentally by traumatizing the legs or intestines of animals. Here the various features of the shock syndrome have been demonstrated by Phemister, Blalock, Harkins, Roome, and others to be due to the large loss of blood plasma rather than the absorption of a toxin produced in the damaged tissues. The extensive loss of plasma protein through the walls of the damaged capillaries is chiefly responsible for the marked increase in concentration of the blood and this in turn to the greatly diminished circulating blood volume.

Is There a Toxemia in Acute Intestinal Obstruction? The possibility of intoxication from the intestinal tract aside from that produced by specific pathogenic bacteria or ingested poisons has been considered by the clinician and experimental investigator for a great many years. Every student of disease must have reflected that of the epithelial membranes which separate the body from the environment, namely, that of the skin, respiratory tract, genito-urinary tract, and alimentary tract, the latter is subjected to the greatest variety of noxious agents at all times throughout life. An infinite variety of chemical substances is taken in the food, and these together with their degradation products produced by the digestive enzymes and the metabolism of the intestinal bacteria present to the absorbing mucosa chemical fractions of all degrees of toxicity. The view has changed from that which held that a great variety of diseases were directly or indirectly due to the absorption of intestinal poisons to the present current conception that these poisons play little or no role in pathology. The former view perhaps received its great impetus through the work and teachings of Bouchard, Metchnikoff, Roger, and Lane while the modern attitude has resulted partly from the failure of therapeutic measures directed against such intestinal toxemia and partly as a result of physiologic investigation which has revealed a protective mechanism against intoxication of intestinal origin. Is this protective mechanism at all times adequate?

Attempts to demonstrate poisons in the blood of obstructed animals have been entirely unsuccessful (McLean and Andries 1912[11] and Wilkie 1922),[12] and the evidence that a toxemia of intestinal origin exists is largely indirect. Thus the transfusion of blood from a dog profoundly sick as a result of acute intestinal obstruction into a normal dog has not produced symptoms of intoxication in the second animal. In this connection, however, it is important to bear in mind the great difficulty of demonstrating the existence even of known intoxications by examining the circulating fluids of the body. Some experiments carried out with Dr. M. L. Montgomery[13] to test this point indicate that only a small proportion of an injected poison remains in the circulating blood, the greater part being promptly removed by the tissues. Two animals were arranged so that the carotid artery of one and the jugular vein of the other were connected through a system of tubes. By merely turning a stopcock it was possible at any time to shift blood from animal A to animal B and simultaneously the blood from B to A. Various poisons were then given to animal A and at intervals thereafter, a cross circulation established. Although, for instance, a double lethal dose of strychnine was injected intravenously in A, so rapidly was this removed from the circulation that when two minutes later the blood from A was shifted into the vessels of B, no evidence of strychnine poisoning in the latter could be observed. Furthermore, although this cross circulation was continued for over an hour at which time animal A died in typical convulsions, no symptoms of intoxication appeared in B. The failure therefore, to demonstrate toxic properties in samples of blood is accordingly by no means conclusive evidence that such an animal has not been poisoned.

The dog has been a most useful animal in which to demonstrate the importance of failure of reabsorption of the digestive juices and loss of plasma protein as pathogenic factors in acute intestinal obstruction. Indeed the fact that it is possible to keep dogs alive for five or six weeks with complete obstruction in any region of the small intestine by the simple expedient of supplying two liters of physiological salt solution by intravenous injection each day, suggests that Gamble's conclusion that we need look no farther for the lethal factors in obstruction is

correct. Indeed I believe that in the dog this is true for the type of simple obstruction exemplified by section of the intestine and closure of the divided ends or by ligation of the intestine with tapes. Unfortunately, however, it is not the case in man. Many have learned to their sorrow that in the most common site of small intestine obstruction in man, namely the ileum, the parenteral administration of salt solution has not produced the effect seen in the dog, has not greatly prolonged life, nor markedly reduced the mortality of the disease. How can we account for this difference between the experimentally produced obstruction in the dog and its counterpart in man? I am confident that all those who have studied the disease under experimental conditions in the dog and who have at the same time had an opportunity to observe it at the operating table will agree that there is at least one definite difference between the two conditions. Let us take a more or less common example, that of acute obstruction of the lower ileum in man due to the pressure of a band of adhesions resulting from previous disease of the appendix or its surgical treatment. The intestine above the site of obstruction is commonly greatly distended with gas and intestinal content: the diameter is four or five times the normal and the increased length of the distended obstructed bowel produces segmentation so that the lumen is occluded by sharp kinks at intervals of ten to twelve inches. That segment immediately above the obstruction is almost always most distended and if the obstruction is of several days duration there may be evident discoloration of the wall and necrosis of the mucosa. In the dog, on the other hand, with an obstruction similar in nature the proximal intestine is contracted, the walls have suffered no vascular damage, and segmentation does not occur. The difference is most readily accounted for by the relatively large amount of muscular tissue in the dog's intestine which enables it to resist a much greater distending pressure without dilatation. With this difference between the two species in mind we attempted several years ago to reproduce in the dog an isolated segment of intestine in which an increase in pressure could develop and lead to distention and vascular damage so that the factors involved could be investigated. The jejunum or ileum was divided in two places about ten inches apart and the ends of this isolated segment infolded and closed, taking care not to injure the mesenteric blood supply. The continuity of the alimentary tract was re-established by suture of the proximal and distal intestine. The closed isolated segment thus produced was dropped back and the abdomen closed. Usually within two or five days the segment became distended with a highly toxic foul smelling fluid, damage to the wall sometimes even to perforation occurred, symptoms of depression and then prostration developed and the animal died. Variations of this experiment were then done which lead us to conclude that the cause of death was absorption of toxic materials formed in these closed loops by the action of the intestinal bacteria, and that the factor which made possible this absorption was damage to the mucosa produced by the distention. The numerous and ingenious experiments of Professor W. D. Gatch of Indianapolis and his conclusions are entirely in harmony with this view. I wish now to present some evidence obtained recently in our laboratory[14] that seems to provide final proof that a toxic product of bacterial origin, normally not absorbed by the mucosa, may be absorbed and produce a fatal toxemia when the intra-intestinal pressure is raised. Closed segments of the small intestine of dogs as previously described were prepared and there was placed in them a small amount of barium sulphate so that distention could be followed with the fluoroscope and in addition a large amount of a very potent toxin produced by Clostridium botulinum. Botulinum toxin was found to be non-toxic on oral administration to dogs and the serum of such animals was found to contain no botulinum toxin when tested on mice. As the closed segments containing the toxin became distended, the animals showed symptoms of depression, and the blood serum was found to contain botulinum toxin in significant amounts. The toxin was in some cases found to be absorbed from the closed intestinal segment before the distention had produced any apparent vascular damage to the wall but it was much more marked when this occurred.

It seems to me that this experiment furnishes conclusive proof that a poisonous substance of bacterial origin which is not absorbed by the normal intestinal musoca, is absorbed when that mucosa is damaged by distention. The clinical application of this finding is evident since the dis-

tended segment immediately above an acute obstruction in the ileum contains a highly toxic product which is produced by the proteolytic activity of bacteria and is not absorbed by the normal mucosa. Distention of the obstructed intestine in man occurs because of the relatively thin wall but is absent in simple obstruction in the dog. For this reason a toxemia complicates the picture of obstruction in man but not in the dog. It is quite probable that if man possessed the thick muscular intestine of the dog the mortality of simple acute obstruction would have been reduced to an insignificant figure by simple replacement therapy with water and salt solution. This reduction in mortality has not occurred and attention must be again focused on local factors in the obstructed bowel.

Wagensteen has clearly demonstrated the efficacy of vacuum suction, by means of a nasal tube introduced into the stomach or duodenum, in decompressing the upper intestines. We are indebted to him for a method that has a great value in the treatment of paralytic ileus and which so markedly increases the comfort and safety of patients after abdominal operations. I believe, however, that the adoption of this treatment in acute mechanical obstruction is unwise, because the segmentation, previously discussed, makes it impossible to be sure that the decompression has extended sufficiently low in the intestine and has relieved that crucial segment immediately above the obstruction site.

It has thus become increasingly clear to me that we must still insist on the old dictum of immediate operation for this disease. Realization of the importance of supplying water and salt where extensive vomiting has occurred, and the necessity of blood transfusion to replace the lost plasma in strangulation, are of the very greatest importance but should not result in delay in attacking the proximal cause of the trouble by surgical measures. It is not my purpose to discuss these in any detail and they vary of course with each individual case. Where extensive vascular damage has occurred, exteriorization and then resection of the implicated segment has proved most useful. The escape of obstructed content into the intestine below need occasion no concern since the toxic material is not absorbed through a normal mucosca. Where vascular damage is absent or where the circulation returns promptly after the obstruction is released, resection is of course not indicated. The obstructed intestine, however, frequently remains distended and quiet and a paralytic ileus supervenes. Decompression of this distended bowel is necessary, and here an enterostomy and the vacuum decompression of Wangensteen are of the greatest service.

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THE VALUE OF X-RAY STUDY IN ACUTE BOWEL OBSTRUCTION

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Thanks to advances in the operative technic and post-operative management of abdominal surgical cases, a notable decrease has occurred in the incidence of post-operative ileus, but as long as surgeons have to deal with intra-abdominal and pelvic purulent processes, occasional cases of post-operative acute obstruction will be encountered. In addition there is a large group of cases of ileus associated with acute inflammatory processes, internal herniations, strangulations, volvulus, infarcts, intussusception, pressure from tumors, impaction of gall stones, food impaction, etc.

In suspected obstruction of acute onset in any case, we are often called upon for roentgenological aid; also when the history indicates the recent occurrence of one or more attacks of a transient nature suggesting ileus, and where the physician

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is unwilling to meet further similar attacks without making every possible effort to establish the cause. The surgeon who opens the abdomen of a patient suspected of having an acute intestinal obstruction expects to find dilated coils of bowel, usually small bowel, containing considerable gas or fluid or both. The gravity of the situation is determined largely by the diameter of the dilated intestinal coils and by their integrity. The operator may even content himself with doing a simple enterostomy on the nearest dilated loop as a life-saving procedure without pursuing the surgical exploration to the point of ascertaining the exact cause of the emergency. The absence of dilated coils of bowel will cause the surgeon to feel that the pre-operative diagnosis of acute ileus was incorrect. Here we have a basis for roentgenological aid in the diagnosis of acute obstruction. Before deciding to operate, it is expedient to establish at least the fact of obstruction. In the opened abdomen the fact is proved by finding widely dilated coils of bowel. It is quite possible to learn of the presence or absence of small intestinal dilation, and to establish the presence or absence of a colonic obstruction, without opening the abdomen if we use the roentgenological means available today in every hospital, no matter how small.

The implements required are simple: a portable or bedside roentgen ray apparatus; a film-holding cassette equipped with double screens; and facilities for film development. No preparation of the patient is required, not even rearrangement of the bandages or dressings. Usually, in cases of small intestinal obstruction, no opaque meal is required or desirable, the diagnosis being made from the scout film. The patient is not turned upon the abdomen with face down; the film-holding cassette is slipped underneath the patient as he lies supine.

The interpretation depends upon the study of the gas areas within the abdomen, supplemented when required by the administration of opaque material by mouth or by enema. Gas is very easily recognized; and by the study of the abdominal gas collections as to form, location, contours, etc., one may decide whether the small intestine is dilated to a degree sufficient to warrant a diagnosis of acute obstruction. This is also true to some extent in chronic obstruction.

The writer's first roentenograms illustrating the value of bedside roentgen ray studies in cases of suspected ileus were offered in the scientific exhibits of the American Medical Association and the American Roentgen Ray Society in 1911, and in various subsequent meetings of the same societies. His first publication occurred in 1914 in his four-volume Atlas of Stereoroengenograms of the Digestive Tract, published by Southworth.[1] His first paper before a medical society on the subject was read in 1915 at the San Francisco meeting of the American Medical Association,[2] with subsequent publications in 1920,[3] 1922,[4] 1923[5] and 1927.[6] G. Schwarz in 1911[7] and 1912[8] wrote several papers on the diagnosis of chronic small intestinal obstruction. Stierlin,[9] Kloiber,[10] Weil[11] and numerous others have since written on both acute and chronic intestinal obstruction, and Guillaume[12] in 1922 wrote a book on the subject, using the writer's technic and some of his illustrations. Meyer and Brams[13] have reported definite help from the roentgenological study of acute intestinal obstruction. It has become a routine in many hospitals in this country to subject every obstruction suspect to x-ray study, at the bedside if required.

The technic is very simple. The patient is carefully lifted on his draw-sheet while a film cassette is placed beneath him in such position as to show the abdominal area. He is not turned upon his face but is left as much undisturbed as possible in the supine position. The x-ray tube of a bedside apparatus is adjusted over the patient's abdomen, and, in a second or half second of suspended respiration, the exposure is made. The cassette is withdrawn and the patient left without having been disturbed any more than for a catheterization, not half as much as in changing the bed linen. Within ten minutes the film may be studied and the question of obstruction settled or further examination indicated.

Up to this moment no opaque material has been given, although, if there are necessary delays in arriving at a decision, it is the writer's experience that no harm results from giving 10 to 20 grams of barium sulphate in a water and lactose or glucose mixture. A very little will suffice. It may be given even in the presence of fecal vomiting, if there is delay in operating. Subsequent films may be exposed at intervals of a few hours until a decision has been reached. It may be useful (in order to show up fluid levels in dilated intestinal coils) to turn the patient on

one side and place the film vertically against the back or the abdomen, passing the rays through the body horizontally, that is, in a direction parallel with the floor.

Acute intestinal obstruction may be considered roentgenologically under two main classifications, 1. whether shortly post-operative or 2. not immediately if at all post-operative. The former group is characterized by a much greater quantity of intestinal gas which in the latter group is often absent to such an extent that it deprives the roentgen study of some of its value.

Every case of either group should have a large film made of the abdomen as a scout or exploratory study. From it may be noted whether there are coils of gas-distended bowel. They are significant according to contour and location. In general, gas in the periphery of the abdominal area is colonic, whereas centrally placed gas collections are more likely to be jejuno-ileal. Frank haustral markings indicate colonic gas. Smooth, unhaustrated, especially finely serrated, contours indicate small intestine gas. Often there are transverse striations across the gas pockets corresponding to the valvulae conniventes which the writer has termed the herring-bone or ribbed aspect; it is, of course, characteristic of small bowel. Also characteristic of small bowel is a parallel arrangement of the intestinal loops, the step-ladder arrangement so characteristic of ileus, as emphasized by Treves. Gas in the stomach is easily recognized. Often the complete outline of the distended stomach and its peristaltic waves, as well as the pyloric sulcus and the duodenal bulb, are outlined by the gas in contrast to the gray abdominal shadow; its position is usually characteristic of the stomach. The diameter of the gas-visualized coils is significant and of just the same value as the size of these coils noted through an abdominal incision.

Normally there is no gas in the small intestine, at least not in quantity sufficient to be recognized on the roentgenogram. In aerophagia and in certain states of chronic small intestine stasis not due to any organic obstruction, gas found in the small intestine presents a characteristic appearance: numerous small, irregularly-spaced gas areas, giving to the central portion of the abdominal shadow the reticulated or web-like aspect which is in distinct contrast to the gastric and colonic gas collections and to the shadows of gas in the dilated coils of acutely obstructed small bowel.

A certain amount of gas distention of the small intestine may not be of decisive importance but when the estimated diameter of the small intestine coil approaches four or five centimeters the diagnosis of ileus is self evident. The demonstration of a step-ladder arrangement of intestinal coils having finely serrated or smooth contours and especially when associated with the herring-bone appearance leaves little doubt as to the presence of ileus.

In order to satisfy himself as to the significance of such shadows found in patients with abdominal distention and other signs suggestive of ileus, the writer early in his investigations of this subject examined a series of one hundred post-operative abdominal cases on the first, second and third post-operative days by films made at the beside in the same manner described above. Many of them made no complaints, their convalescence being ideal. In others gas pains were disturbing but in none was a post-operative obstruction seriously considered. The surgical work had been carried out as gently as possible with a minimum of handling of intestine, often none at all, and with a minimum of abdominal or pelvic packs (gauze packs). This experimental work was done shortly after the work of Whipple and his colleagues, who showed us that the use of laxatives for pre-operative preparation in abdominal surgery favored the development of intestinal gas as a disturbing factor during the operation and in the post-operative period; so none of these patients had had laxatives, yet the majority of them showed more or less gas distention of the intestine, both in the small intestine and in the colon. It seemed evident that even the gentlest abdominal surgery, perhaps even mere opening of the abdomen, may be sufficient to cause a certain degree of ileus, which we assume to be paralytic in nature. But when intestinal coils assume the parallel arrangement and a menacing diameter, then the determination of the fact by simple x-ray study takes on much value. If the colon is distended by gas, whether or not small intestine coils are seen to be distended, enemas should be given to dislodge the gas from the colon if possible. Most cases of distressing post-operative abdominal distention are due to colonic gas, the passage of which can be materially aided by the introduction of the

colon tube and, if needed, a small enema of weak soap solution or a diluted gylcerine enema. The colonic gas, once expelled, the rest of the abdomen can be more carefully studied for small intestine gas collections. Any gas-visualized loop of small bowel, even only a few centimeters in length, if it measures four or five centimeters in diameter, and especially if it is ribbed, is highly suggestive of ileus.

The majority of cases of acute intestinal obstruction are due to lesions of the small bowel rather than of the colon, but a persistent accumulation of gas in the colon, not relieved by enemas, may be suggestive of acute colonic obstruction due to one of the causes which will be enumerated later.

When the diagnosis of acute ileus is clearly established by characteristic findings in the scout film, no further x-ray studies are required. The differentiation between paralytic and mechanical ileus is not a matter for x-ray determination; it is suggested by the history, the presence or absence of intermittent gas pains or visible peristalsis, and especially by oscultation of the abdomen.

However, the presence of gas in the obstructed coils is a sign often lacking. The obstructed bowel always contains a certain amount of fluid and sometimes too little gas is present to be of diagnostic value. This condition obtains especially in cases which are not immediately postoperative. The obstruction has supervened painlessly at first, later with intermittent cramps. still later the pain may disappear, for probably every case of mechanical ileus sooner or later becomes paralytic unless relieved. Even under such circumstances a ribbed or herring-bone appearance may be noted.

Thus far, an effort will have been made to omit the use of opaque ingesta. Some have felt it positively dangerous to administer barium or other mixtures of any kind by mouth as constituting additional risk to the patient. The writer has never so considered it. If obstruction is not present the small quantity of barium employed passes on without disturbance, whereas if obstruction is present, not only will it be removed following the operative intervention, but its presence in the bowel will serve to identify and differentiate the loops above the obstruction from those below. Its presence within the intestine can be readily recognized by inspection of the bowel in the opened abdomen. A very small quantity of barium or bismuth suffices for the study—a heaping tablespoon of the powder stirred in water and fed to the patient in tablespoonful doses or through a tube.

However, since even this explanation does not serve to allay the fears entertained by some that the barium may cause additional risk, the writer has lately adopted the use of "umbrathor," an aqueous solution of thorium dioxide, as the opaque medium for oral use and in many cases for rectal injection. This aqueous solution never precipitates.

Generally it is expedient to employ the barium or other forms of opaque enema first, to exclude the colon as the seat of the obstruction. It often happens that marked small intestine distention, even of the entire small bowel, occurs secondary to obstructive lesions well along in the colon, even in the sigmoid. A case of small intestine distention of enormous diameter was found to be secondary to carcinoma of the middle of the transverse colon. Another case was found to be due to torsion of the cecum; still another to volvulus of the sigmoid. Naturally, in these lesions of the colon there is seen in the x-ray film not only the small intestine dilation but also the gas distention of the colon proximal to the site of the obstruction. It has often occurred that films of the enema-filled colon showed coils of small intestine with the characteristic parallel arrangement sought as the definite proof of the fact of ileus when on the scout film these parallel coils could not be discerned.

There are numerous instances when both the scout film and the opaque enema fail to show sufficiently convincing evidence that an acute obstruction is present; the surgeon or the attending physician or the family protestations against further intervention may all combine to cause delay in deciding definitely for surgery. Under such circumstances it is quite justifiable to give opaque materials orally, especially when umbrathor is employed. The presence in the bowel of this opaque substance does not militate in the slightest against the patient's chances of recovery. It may be administered even in the presence of fecal vomiting, as if there could be much doubt under those circumstances. It is practically impossible for a patient by vomiting to evacuate anywhere near completely the opaque materials introduced into the stomach by spoon

or tube. Often we have made observations on patients in whom a barium meal had been given, followed by efforts to wash out the opaque materials from the stomach. We have found it practically impossible to get rid of the opaque salt by gastric lavage. In this connection it may be recorded that in doing cholecystography it has been a frequent observation that orally administered gallbladder dye has been returned, sometimes by repeated attacks of nausea, retching and emesis; yet in such cases we nearly always find that sufficient dye has remained in the stomach for diagnostic purposes and a good gall bladder shadow has been obtained unless there was some pathological situation preventing visualization of the gall bladder. In the suspected obstruction cases, with severe vomiting, opaque material introduced into the stomach soon finds its way into the small intestine, and eventually, according to the site of the obstruction, we note the obstructed coils beautifully visualized, with the characteristic transverse ribbing and contour serration.

After all, the main object of the roentgenological study in cases of suspected ileus is to exclude ileus or to establish the fact of ileus. Lack of conviction that ileus is present is the chief deterrent of early operation for relief of obstruction. Hope persists that the distention may be relieved spontaneously or as the result of the use of enemas or pitressin. Precious time may be lost unless operation is proceeded with. Demonstration of the fact of ileus is the important thing. With this fact assured, the surgeon will then be enabled to decide on the form of treatment. The site of the obstruction is of importance, of course, but less vital than the demonstration of the existence of the stenosis.

High obstructions are usually found when the small intestine coils of distention are confined to the upper abdomen; generalized small intestine distention indicates an obstruction low in the ileum or even in the colon. The history of previous operations may point to the operative field as the likely seat of the obstructive lesion, even though the operation occurred years before. Internal herniations, ileitis, intussusception, tumor, volvulus, Meckel's diverticulum, diverticulitis of the colon, are the more common causes, but most frequent is an adhesion of some normally movable coil of bowel, especially small bowel, to a fixed structure or to the stump of some structure which has been removed, such as a loop of ileum attached to the uterus at the site of a myomectomy, to the stump of a tube, to an ovary after some local cyst removal, or to the abdominal wall at the site of an incision, especially if drainage has been utilized. One case revealed small intestine herniation alongside the emerging loop of bowel in an inguinal colostomy.

Summary: Once more the writer emphasizes an important test of acute intestinal obstruction, available through bedside study with the x-ray. The examination made at the bedside disturbs the patient very little; no dressings are removed, the patient is left supine, or at most is turned only on one side. The information is immediately available. Usually no opaque medium is given, though it may be used with profit and without harm, especially if one uses the aqueous solution of thorium dioxide (umbrathor) in place of the ordinary barium sulphate suspension. An oqaque enema is often helpful. The chief value lies in the ability to determine by roentgen ray study the existence of dilated loops of bowel; to differentiate gas in small bowel from colonic gas; to estimate the actual caliber of the intestinal loops thus visualized; but mainly to confirm the fact of ileus before proceeding to surgery.

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THE SURGICAL TREATMENT OF ACUTE INTESTINAL OBSTRUCTION*

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The treatment of acute intestinal obstruction is surgical. John B. Murphy's old and often repeated statement, "procrastination is the greatest and most frequent error in surgery," is especially true for this condition. Murphy's dictum in the presence of an intestinal obstruction was "get in quick and get out quicker." The heavenly roster has received few persons dying from unnecessary exploratory incisions, but its pages are crowded with those whose explorations were tardy or neglected. When the intestine is mechanically obstructed early exploration is demandatory. True, the vigilant surgeon must carefully evaluate in his operative approach the general condition of the patient, the period of time elapsed since the onset of symptoms, the cause and location of the obstruction and the extent of associated changes both locally and generally as manifested by the symptoms and blood of the patient.

Acute intestinal obstruction makes the alternative of death or surgery. The surgical procedure of choice is performed with the patient adequately prepared preoperatively and designed first, to relieve distention and other acute symptoms; second, to disrupt the etiological cause of the obstruction and restore the continuity of the gut and third, to rehabilitate the patient from toxemia and shock.

Immediate surgery does not prevent preoperative preparation of the patient. Dehydration is alleviated by the intravenous or subcutaneous administration of two and one half to five per cent glucose in normal saline in quantities ranging from 3,500 to 5,000 cubic centimeters in twenty-four hours. The transfusion of from 250 or more cubic centimeters of blood is often a necessary initial and repeated procedure to combat shock. This is especially true in the presence of intestinal strangulation with resultant intra-abdominal blood loss or when the systolic blood pressure falls below 100 millimeters of mercury accompanied by a pulse that remains rapid and of poor quality despite the adequate administration of glucose in normal saline. Intranasal oxygen in a 95 per cent. dilution administered at the rate of four to six liters per minute is employed to decompress the bowel and to detoxify and conserve the intestinal muscle tone as well as to relieve the respiratory mechanism. The recognized value of continuous, controlled siphon-decompression of the stomach and small intestine in the manner of Wangensteen or Miller and Abbott used both as a preoperative and postoperative measure cannot be too strongly emphasized. For this procedure the lead tipped, multiple perforated tube of Wangensteen or the special Miller-Abbott intubation tube is most serviceable, and in certain cases of simple obstruction due to adhesive bands (six to ten per cent.) this treatment alone may effect their recovery. In the absence of peritonitis rectal siphonage partially relieves the patient and prepares the lower bowel for surgery. The signs of successful decompression are: cessation of colicky pains, diminution of fluid aspirated per suction, less distention and a possible passage of gas into the lower bowel. With the foregoing operative preparation and the location of the obstruction accurately determined by a correlation of history, symptoms, flat supine x-ray of the abdomen and occasionally a thin barium enema, the patient is ready for surgery.

The worth of a trained physician-anesthetist in operations such as these has been repeatedly proved. The method of choice is well-controlled general anethesia. General preference is probably nitrous oxide or cyclopropane reenforced with ether, supplemented by local infiltration of procaine. It is true that spinal anesthesia, especially metycaine, has certain anesthetic and physiological advantages that at times demand its use. Preanesthetic medication for the average adult patient is one-eighth to one-quarter grain of morphine combined with one, one-hundredth grain of scopolamine. The barbiturate group when judiciously and skillfully combined with the preanesthetic medication produces mental placidity, relieves pain and reduces the necessary amount of general anesthesia. During the anesthetic continuous duodenal suction is maintained, and after the induction of the anesthesia, perioral glucose in saline may be started.

The success of surgery in intestinal obstruction is founded upon the adaptation of the procedure to the condition present in each individual case. Thus when a localizing diagnosis has been made as to the nature and location of the lesion,

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the best possible incision for the exposure of the pathological condition can then be made. However, if localization has not been possible an exploratory operation must be undertaken. A mid, right-rectus incision is generally most satisfactory as it provides exploratory access to the entire bowel and operative access to all except the colon distal to the midpart of the descending portion. Obstructions of the pelvic colon with resulting "closed loop" distention are most satisfactorily relieved by a short right-sided incision through the rectus muscle and directly over the transverse colon, although cecostomy or ileostomy at other sites may be performed. The operative incision of choice for the performance of a low enterostomy is a vertical one on either side of the linea alba. In the event that the pathogenic condition absolutely necessitates a high enterostomy, a left-rectus incision is most serviceable, although an indwelling duodenal tube with suction frequently effects a decompression equally as well. Pelvic colostomy is best done through a short, mid-line, left-rectus incision, while the attack on other portions of the colon must be adapted to the region and the nature of the obstruction. Incisions through or in close proximity to scars of former laparotomies are always to be avoided.

The wise selection and meticulous execution of a desirable operative procedure that takes into careful consideration the nature, location and extent of the obstruction is an absolute surgical requisite. It has been pointed out that early operation is necessary to reduce mortality. The terms "early" or "late" as used herein refer not to hours but to the degree of distention present and the patient's general condition. The types of mechanical obstruction with which the surgeon will have to deal are those interfering with the bowel's circulation causing strangulation, and those interfering with the bowel's continuity but not primarily involving circulation. After surgical exploration, the surgeon must have answered the following questions: Is the obstruction high or low? Is the obstruction early or late? Is the obstruction simple or strangulating? Is the bowel viable or nonviable? Can a procedure of election be done or must an emergency measure be instituted? The operator must always be guided by the dictum that the procedure to be selected is the one that will give the patient the greatest relief with the least risk. The surgeon's primary purpose in an emergency operation is to save life by aseptically decompressing the bowel and preserving its viability so that its continuity may be restored. To do this, the surgeon has at his disposal the following operative procedures in dealing with obstructions of any type: 1. Simple mechanical release of early incarcerated bowel or strangulated herniations. 2. The disruption of constricting bands or adhesions. 3. Simple enterostomy or colostomy. 4. Excision of the obstructed bowel with the reestablishment of its continuity. 5. Exteriorization with formation of an immediate or delayed fistula. 6. Entero-anastomosis about the obstruction. The patient's condition and the bowel's viability are the two factors that most profoundly influence the surgeon's choice and manner of procedure. If the viability of the gut as established by its color, state of mesenteric vessels and its contraction reaction to pinching is questionable, it should be treated as being dead. In certain situations an adhesive band or bands will be found to be producing the obstruction, and if discovered early these may be carefully divided. Caution must be exercised, however, as leakage has repeatedly followed this procedure. Too infrequently the surgeon elects to do enterostomy when it is the procedure of choice. By this is meant the surgeon all too often divides bands, breaks up adhesions and does manipulations and procedures which indirectly condemn the patient to death when a simple enterostomy would have preserved life and permitted a later establishment of intestinal continuity. It must be pointed out here that one of the most important recent advancements in gastrointestinal surgery is the surgeon's acceptance of the advisability of multiple operations.

Enterostomy is a most useful operation and probably has a more extensive application in the treatment of mechanical intestinal obstruction than any other single procedure. Its success, whether performed upon the exceedingly ill patient or the good risk, is dependent upon sound surgical principles aseptically carried out. Its use is indicated when immediate decompression is necessary to prevent the distention of the bowel from mechanically damaging the wall with resulting toxic absorption, perforation or circulatory embarrassment with loss of the bowel's viability. Likewise, when a rapid and complete decompression with the release of toxic material

followed by moderately early administration of oral fluids is desired, enterostomy serves well. Consequently its use in late simple obstructions as produced by single adhesions or bands, in guarding semi-devitalized gut as after the reduction of intussusception or volvulus, in protecting suture lines as following anastomosis or foreign body removal, in persistent paralytic ileus or obstructing spastic ileus, enterostomy is found to be readily executed by the surgeon and well tolerated by the patient. The technic of temporary enterostomy is that of Witzel or a modification therof such as Linton's procedure.

Seldom does entero-anastomosis have a place in the treatment of acute intestinal obstruction as its execution carries a great operative risk. Its use always precludes that the bowel is completely viable and that the obstruction is at the moment irremovable. Thus its selection is mainly reserved for non-acute obstructions high in the small bowel. Conceivably, it has a primary place in the emergency treatment of a malignancy, an obstructing benign growth or dense occluding adhesions occurring high in the jejunum. The fate of sidetracked loops with resulting distention and untoward symptoms also tends to condemn this procedure.

When the operator encounters frankly devitalized gut, his only surgical alternative is exterioration or primary resection and anastomosis. The latter procedure is usually to be strictly avoided as an emergency measure, but when the surgeon encounters completely devitalized bowel due to mesenteric thrombosis, gangrenous volvulus or irreducible intussusception, resection is advisable. At times the surgeon may elect to do a resection and anastomosis in several other types of obstructions, but the patient and the morbid condition must be favorable.

On the other hand, exteriorization has a very useful and wide application. True, its use in the upper small bowel area is to be avoided. Even in the face of these facts, exteriorization for this region may be done if the digestive fluids escaping from the proximal bowel fistula are transferred directly or indirectly to the distal fistula. Exteriorization also permits bowel aspiration directly at the point of obstruction. In those cases with non-viable gut which will not tolerate even a modest surgical procedure or when possibilities of grossly contaminating the peritoneum exists, exteriorization offers a rapid, easy and certain method of obstruction relief.

As has been pointed out, resection with primary anastomosis is sometimes the procedure of choice or necessity. Failures resulting when this method is used, arise primarily from the lack of aseptic technic and not excising widely enough at the area to be resected. On the proximal side of the obstructed bowel it is necessary to resect a segment at least six to eight inches from the devitalized area. On the distal side it is usually sufficient to divide the bowel three inches from the site of embarrassment. It must be remembered that when the bowel is opened in a primary procedure that immediately returns it to the abdominal cavity, the mortality tends to rise sharply. The content of an obstructed bowel loop is highly infectious and any portion of the intestine being opened under these circumstances should be carefully packed and isolated from other bowel loops. Bowel walls that have become very thin from prolonged distention should be completely deflated between clamps and allowed to regain wall tone by wrapping the area in very warm packs for three minutes before any operative procedure is attempted. The presence of possible contamination even before actual operative manipulation must be considered, in which event the process of mechanically cleansing the bowel externally with a one per cent. solution of sodium ricinoleate as after Wangensteen, is to be recommended both as a cleansing agent and as a possible preventative of adhesions.

The most frequent cause of acute intestinal obstruction arises from the gut becoming strangulated in an internal or external hernial opening. The former is of rare occurrence, but the frequency of strangulation in inguinal, femoral and umbilical hernias calls for clear surgical concepts. In general, their non-surgical reduction by manual manipulation is dangerous and to be avoided. For inguinal and femoral incarcerations, early operation carried out through a hernial incision and designed to divide the band causing the strangulation is in order. If the band has produced only a ring-like area of damage, the area may be inverted by a fine line of sutures, more extensive damage in good risks will permit resection and primary anastomosis. Poor operative subjects best tolerate exteriorization and proximal enterostomy. Strangulated internal hernias are often difficult to identify: once found,

however, a two-stage procedure designed first to relieve obstruction and later to appropriately correct the hernial defect is carried out.

Foreign bodies not infrequently obstruct the bowel and necessitate the surgeon's attention. The most frequent offending agents are gallstones, large fecaliths, ingested foreign bodies and worms. Meconium may obstruct the bowel in the newborn. At times the site of obstruction may be complicated by the bowel tending to twist or roll upon itself, producing a rather wide area of damage. Operation is demandatory and the procedure is adapted to the morbid state present. Stones or other foreign bodies may at times be displaced proximally away from the damaged and obstructed site into a healthy area of gut and there crushed, or in the same manner the object may be displaced, isolated between clamps and the bowel incised and the body extracted. Not infrequently less risk and fewer operative difficulties are occasioned by the exteriorization of the loop of gut containing the foreign body. In this manner, after the skin has been closed, the foreign body may be removed and the incision in the bowel closed or enterostomy performed. Later the bowel may be dropped back into the peritoneal cavity when the convalescence of the patient is absolutely assured.

Intussusception is a strangulating condition most common about the ileocecal region occurring mostly in infants of weaning age. Certain cases have been conservatively reduced under x-ray visualization, being guided by a barium media, but surgery still remains preferable.

Volvulus of the bowel produces torsion in a clock-wise direction which when exposed early requires simple untwisting, although when distention is present this procedure may require decompression of the gut by means of a large needle. In late involvements with devitalized bowel excision or exteriorization must be selected. When more than four feet of the small intestine is involved, primary resection and anastomosis is to be chosen. However, extensive damage to the large bowel calls for exteriorization and proximal colostomy. In all resecting operations the mesentery is saved and wrapped about the suture lines, thereby preventing leakage, establishing circulation and curtailing reoccurrence.

An adynamic or paralytic type of ileus may arise as a result of over-active sympathetic nerve influence and is characterized by a rapid distention of the major portion of the intestinal tract. These obstructions of nervous imbalance respond best to continual duodenal suction and rectal siphonage. Enterostomy is to be considered only when all other measures have failed. Heat to the abdomen and lumbodorsal area is of considerable worth, and the careful use of smooth muscle stimulants frequently give relief. Oxygen administered intranasally at times produces marvelous response. The stimulating effect of 100 cubic centimeters of 15 per cent. intravenous saline solution upon the bowel's peristaltic movements must also be mentioned as well as the relief occasioned by spinal anesthesia.

Dynamic ileus, or perhaps more descriptively spastic ileus, is usually relieved by duodenal suction, rectal siphonage, heat to the abdomen and anti-spasmodic drugs. In the face of great distention proximal to the spastic obstruction, enterostomy under spinal anesthesia must be resorted to. Spastic ileus predisposes the bowel to intussusception and has a tendency to reoccur—a condition best coped with by sympathectomy.

Hirschprung's disease not infrequently produces fecal obstructions of the lower bowel. This condition is best treated following the failure of enemas to provide relief by colostomy. When surgical preparation is possible sympathectomy is the procedure of choice.

Imperforations of the anal canal and rectum with their various diseased conditions calls for proctoplasty or for colostomy with later plastic closure.

CONCLUSION

In the postoperative treatment of intestinal obstruction the surgeon must realize that obstruction occasions two profound disturbances; namely, distention and the loss of body fluids. This causes the patient to be especially prone to surgical shock following operation, and the surgeon's primary concern is to the state of the circulation. Shock is best prevented or combated by preserving the patient's body heat, elevation of the foot of the bed, assisting in frequent changes of posture, encouraging movement of the body and extremities, insisting upon and helping in deep breathing periods, the inhalation of carbon dioxide and the administration of intranasal oxygen. The latter measure combined with continuous duodenal decompression is the surgeon's most efficacious means of

combating postoperative distention. A completely decompressed bowel will prevent, in a large measure, the possibility of perforation, of toxic intra-intestinal absorption, of adhesion formation, of paralytic ileus and of vomiting as well as the protection of suture lines. The restoration of fluid balance and the establishment of a source of chemical and nutritional intake by means of perioral glucose in normal saline is of paramount importance. At times, a blood transfusion or intravenous acacia solution is demanded before the more profound symptoms of shock are combated. It must be emphasized that fluids by mouth before the intestines have regained their normal peristaltic tone frequently cause the surgeon much avoidable concern and not infrequently the patient's death. Consequently, fluids when first permitted thirty-six to eighty-six hours after surgery, should be limited to warm salt water only, later weak sweetened tea and finally a more generous intake may be had.

Pain, when present, is probably best controlled by substantial hypodermic doses of codeine or the barbiturates administered intravenously or rectally. It must here be mentioned that morphine tends to stimulate the activity of the small bowel with an inhibiting effect upon the large portion, which contrasts with the stimulating action of pituitary substances upon the large bowel.

Cathartics have no place following this type of operation as after five to eight days American oil administered by mouth provides the most physiological evacuation. Other medical measures are facilitated by laboratory indices such as blood chlorides, introgen and carbon dioxide levels. Postoperative distention must constantly be guarded against and dealt with as outlined in the treatment of paralytic or dynamic ileus.

Again I repeat that the mortality resulting from intestinal obstruction can be lowered only by an early, accurate diagnosis with prompt surgical intervention that combines sound operative judgment and meticulous technic with wise pre and postoperative care.

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STRABISMUS

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CHICAGO

The subject, "the care of cross-eyes," which has been selected for this section, is not intended or expected to supplant well-accepted methods of procedure which have been successful, but not 100 per cent., for the last half century or more. Many surgeons pursue a method which they have selected as satisfactory to them for so many years that they believe their method cannot be improved upon. This paper offers suggestions which may be of interest to general practitioners as well as ophthalmic surgeons, and may assist many unfortunate cross-eyed patients who have not received 100 per cent. good results.

There are three good reasons for presenting this subject:

First: To stress the early non-surgical or preschool treatment of squinting children.

Second: To suggest bifocal glasses for squinting children when necessary.

Third: To emphasize orthoptic treatment before and after surgery.

When should treatment begin? This question should be answered by the positive statement that non-surgical treatment should begin with atropine as soon as the squint appears.

In a given case, the history should include age, the kind, duration and amount of deviation of the squinting eye. If, under atropine, the result

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is satisfactory by the use of distance glasses, or Number One, all concerned are satisfied.

If the result is not satisfactory by the use of distance glasses, or Number One, then Number Two, or bifocal glasses with large inverted segments are prescribed. Segments of plus 2.50 D or plus 3.00 D, or a trifle less, are added to the distance correction to abolish accommodative effort even though the distance correction is little,

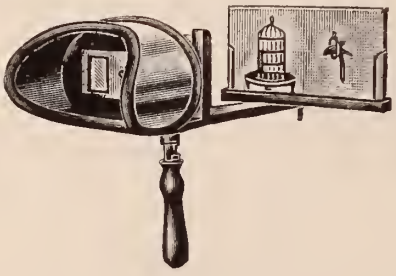


Fig. 1. Bird and Cage—New Era Optical Company, Chicago.

or even if the refraction is normal under atropine.

When the result is not satisfactory after the use of Numbers One and Two, Number Three, or orthoptic training, is added to what has already been done. Much can be accomplished with almost any kind of a stereoscope and a set of prisms. The bird and cage (Fig. I) is quite attractive to children when trying to put the bird in the cage. (More elaborate instruments are reported in this paper.)

If the result is not satisfactory after Numbers One, Two and Three have been given a fair trial, surgery is indicated, but not until the child is cooperative enough to have the operation performed locally. Orthoptic training is always begun a few days after surgery is done.

Amblyopia is not infrequent in squinting children and often disappears when proper glasses are worn, but if it persists some form of occlusion is recommended, and one of the best and most agreeable to the child is easily accomplished by placing enough soap on the outside of the glass of the best eye to make the amblyopic eye the better of the two.

Bifocal glasses in children, a very important subject, is scarcely mentioned in medical literature, but it is cheering to know that our own Drs. Guibor and Gifford have recently been prescribing bifocal lenses for squinting children in their clinic at the Northwestern University of Chicago. The late Dr. George A. Suffa of Boston originated the practical use of bifocals in children (Transactions of the American Homeopathic Ophthalmological, Otological and Laryngological Society, 1913) and his method has been used continuously for twenty-five years by Dr. Burton Haseltine of Chicago, who has added many practical improvements in the making and adjusting of bifocal spectacles for squinting children one of which is the very large inverted segment for close work. (Fig. 2)

Orthoptic Treatment of Strabismus. By the orthoptic treatment of strabismus is meant the

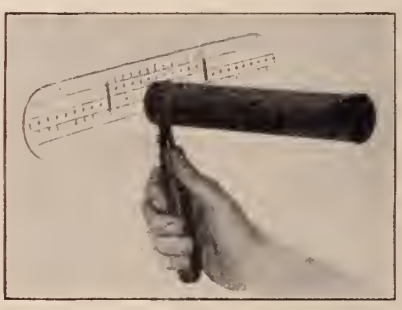


Fig. 3. Hand Diploscope—Cantonnet's Book.

re-education of the ocular muscles so as to bring about normal fusion with correct binocular and stereoscopic vision.

In the United States scientific orthoptic treatment is comparatively new. Leading textbooks of ophthalmology devote but little space to the subject; Fuchs' "Textbook of Ophthalmology" (Douane), 7th ed. 1924, and 10th English ed. (Brown) 1933, refers only slightly to orthoptic training,

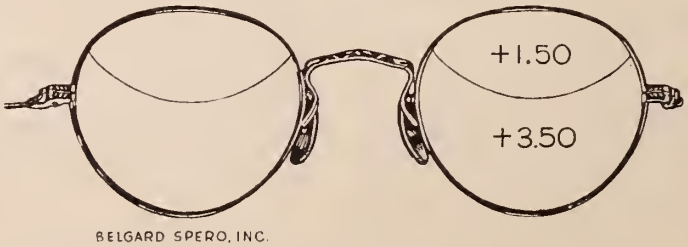


Fig. 2. Bifocal Glasses with Large Inverted Segments.

but admits the value of stereoscope and amblyoscope in educating the fusion faculty. One of the most recent large text-books, that of Berens, 1936, "Eye and Its Diseases," also gives only a small space to orthoptic treatment of squint but states that some amount of orthoptic training is essential both before and after operation. Howard's book, 1937, and Gifford's book, 1938, give good but brief descriptions of their methods of



Fig. 4. Rémy's Separator—Peter's Book.

orthoptic treatment. May in "Manual of the Diseases of the Eye," 1924, describes the amblyoscope, and in the 1937 edition adds the cheireoscope and the synoptophore, and gives a good but very brief description of orthoptic training. Parsons in "Diseases of the Eye," 1936, gives a short description of the manner in which he uses the stereoscope.

Ambroise Paré, in the sixteenth century, attempted a form of occlusion by causing squinters to wear a mask on the face with a central perforation in front of each eye to induce the visual axes to become parallel. In modern times the first mechanical arrangement which was used to attempt straightening of squinting eyes was Wheatstone's stereoscope, introduced 100 years ago in 1838. Modern orthoptics is really a French development as Javal, who may justly be called the father of orthoptics, was the first to lay down and systematically practice definite stereoscopic exercises for the relief and definite cure of squint without surgery. His system is fully described in his "Manuel du Strabisme," published in Paris in 1863. About this time Donders and others were using lenses for the same purpose. Javal suggested the connection between binocular vision and the synergic action of the ocular muscles, and this book was the foundation of the physiologic orthoptic training for the cure of strabismus. The invention of Worth's amblyoscope was a great advance over the stereoscopic method of Javal; but the greatest and most enthusiastic protagonist of the orthoptic method was Albert Rémy, who worked at it continuously from 1901 to 1925 in Lapersonne's eye clinic in the Hôtel Dieu, Paris. Rémy invented the diploscope which he used constantly. At this time a cure of strabismus by orthoptic training

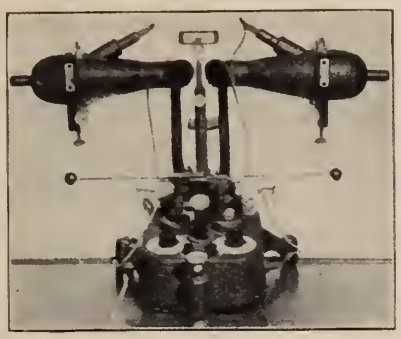


Fig. 5. Synoptophore—Peter's Book.

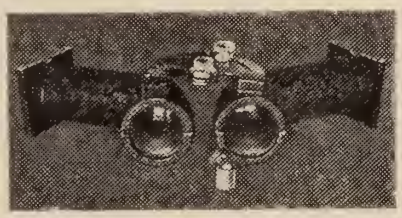


Fig. 6. Amblyoscope—A. M. Optical Company, Chicago.

alone was recorded as taking from three to five years.

Within recent years special orthoptic training departments, in connection with ophthalmic hospitals, have been established in England and in the United States, and to a lesser extent in Germany and other countries. In Germany, Hesse and Sattler were the most prominent advocates of orthoptic training; the latter used prisms, the amblyoscope and the special charts which are named after him. In Finland, Stenius obtained excellent results with the amblyoscope. In France and in England the method is extensively used. In the United States the best known exponents of the method are Peter, of Philadelphia, and Guibor of Chicago.

The various exercises in orthoptic training are designed, first, to develop rapid, steady fixation of the squinting eye and, second, to develop dynamic binocular vision, the latter being dependent upon an appreciation of the ocular move-

ments and innervation involved in seeing an object.

The results obtained in amblyopic eyes by continuous occlusion alone might be referred to here. Gifford states that those who practiced prolonged uniocular occlusion report the best result. Delord, with four to six months' occlusion, obtained improvement in vision in 35 cases; Peter reported 50% improvement; Herzau, in 41 cases, obtained 43% of improvement with occlusion of from one to six months. Bielchowsky thinks that the best results are secured if the occlusion is undertaken before the age of six years. As a general rule, however, it is very difficult to keep up prolonged occlusion in young patients. Bressler states that, in the Illinois Eye and Ear Infirmary, fusion was frequently developed in patients with vision in the amblyopic eye ranging only from 2/200 to 6/200. Paralytic squint, which is usually accompanied by diplopia, is not amenable to orthoptic or surgical treatment, but often corrected by internal medicine. Cantonnet thinks that in elderly subjects re-education is a waste of time. As a rule, after 30 or 35 years of age a subject cannot be re-educated with any hope of success. Also that, other things being equal, a better result will be

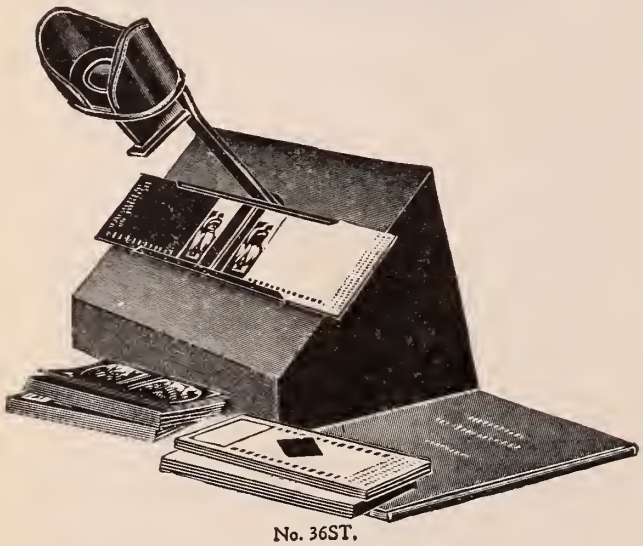


Fig. 7. Stereoscope—New Era Optical Company, Chicago.

obtained with a subject of 17 or 18 years than with a child of six or seven years, because the will and intelligence are better. Hansell and Reber and Maddox think that fusion can be developed in adolescents and young adults by orthoptic exercises. Rasquin and Onfrey in France express a similar opinion.

METHODS OF ORTHOPTIC TRAINING: Methods of orthoptic training in strabismus, representative of leading French, English and American Eye Clinics follow.



Fig. 8. Cheiroscope—New Era Optical Company, Chicago.

Cantonnet's Method. In the French method, as exemplified by Cantonnet and associates in the Albert Rémy School of Reeducation, Paris, the various steps in the orthoptic training are designed for the following purposes:

1. To correct as far as possible any refractive errors.
2. To conquer the amblyopia of the squinting eye.
3. To overcome neutralization.
4. To pass from simultaneous to binocular vision.
5. To obtain the sensation of relief (stereoscopic vision).

The orthoptic treatment is directed to forcing the amblyopic eye to function by de-neutralizing it in an intense light; the general rule is to bring the deviated eye to "fix" and try all means to get rid of neutralization at different distances; to help the neutralized eye by lowering slightly the vision of the fixing eye by using black and white colored patches in diploscopic exercises (Fig. 3). The diploscope was invented by Rémy and is only an elaboration of Wheatstone's stereoscope, the instrument used by Javal in his original orthoptic exercises. Both large and small

diploscopes are used—the small one for home use. In patients under the age of five years occlusion of the fixing eye is employed; above the age of five years, no occlusion, but diploscopic exercises only. Rémy's Separator (Fig. 4) is used for those who have reached the stage of simultaneous vision. This instrument was de-



Fig. 9. Stereo-orthopter—A. M. Optical Company, Chicago.

signed for use at home and is used to break down suppression as well as to correct the over-convergence which occurs in accommodation in some cases of squint.

Cantonnet places great stress on the mental effort of the patient. To make a convergent squinter place his eyes in relative divergence he must be made to fix mentally a distant object placed above the plane of the horizon. "When we think of a distant object or of an object that moves from us our eyes place themselves in a state of relative divergence." Mental effort and synergy constitute the basis of the French method of re-education and the exercises are planned toward this. Prisms are indispensable for those who cannot make this mental effort.

English Method. As a representative English method, that of Dr. Margaret Dobson of the London County Council Orthoptic Training Clinic may be given. The training of strabismic patients is divided into three stages:

1. Improvement of the amblyopia of the squinting eye.

2. Enlargement of the restricted monocular field of fixation in the squinting eye and strengthening of the concomitant movements of the eyes.

3. Fusion training so as to obtain binocular vision in different degrees.

To improve amblyopia of the squinting eye refractive errors in each eye must be accurately corrected by lenses, prisms and concentrators. If the visual acuity is very poor and the squint more than 15°, it may be necessary to occlude the sound eye. When the vision in the amblyopic eye has been improved to 6/18, true fusion should be obtainable with the synoptophore (Fig. 5).

American Methods. The procedure followed by Peter and Guibor may be considered as typical of those followed in American orthoptic training clinics by physicians. The most essential phases in Peter's method in the Graduate School of the University of Pennsylvania, can be placed in the following order:

1. Correction of amblyopia at an early age.

2. Concentration with the synoptophore (Fig. 5) which is an amplified amblyoscope.

3. Judicious use of surgical intervention when necessary; such intervention renders orthoptic training easier and brings about a more prompt and more complete recovery.

4. Enthusiasm in all details of the work and an open and unbiased mental attitude as to results.

Guibor's method in the Northwestern University Orthoptic Clinic, Chicago, is outlined as follows:

1. An atropine refraction and determination of the type or class of strabismus.

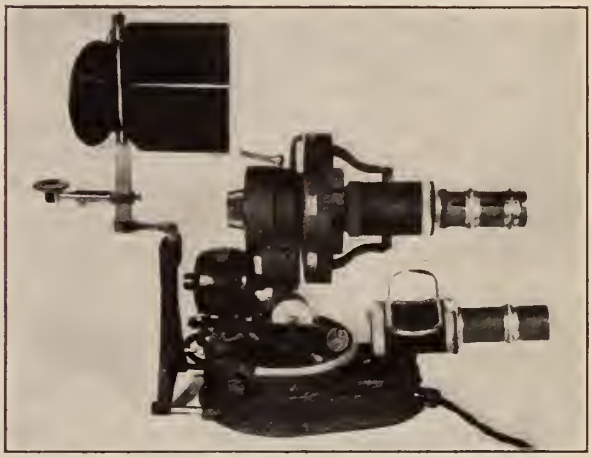


Fig. 10. Myologic Unit—Cameron Surgical Supply Company, Chicago.

2. A proper correction depending on the type of strabismus.

3. Improvement of the vision of the amblyopic eye.

4. Overcoming of suppression.

5. Production of binocular perception and superposition.

6. Production of fusion.
7. Production of stereopsis.
8. Training of fusion and amplitude.
9. Training of duction power.

Guibor states that suppression is the most important factor to be overcome in squint. It is accomplished in a number of ways; by increasing the illumination before the suppressed eye; by lessening it before the fixing eye; by placing large objects before the suppressed eye or smaller objects before the fixing eye; by the use of plain and colored charts. Wells, Sattler's, Worth's and Hamblin's stereoscopic charts are used. The detail of Guibor's general routine is as follows: At the first and second visits the child's history is taken and examination made to determine muscle balance, motility, fixing power and diplopia; the angle of anomaly is taken by perimetry. Tests are made to establish the presence or absence of binocular vision and the degree of fusion and its amplitude, also the strength of monocular vision. For these purposes the instruments used (as well as for treatment) are the amblyoscope (Fig. 6), stereoscope (Fig. 7), synoptophore (Fig. 5), and various charts. Prisms may or may not be used with the stereoscope. Guibor thinks that the instrument of most value in orthoptic training is the stereoscope (Fig. 7). "With this one may train fusion and increase fusion amplitude, disassociate convergence and accomodation, training either at will."

Dr. S. R. Gifford points to the feasibility of orthoptic training in the case of private patients as distinct from those visiting clinics. The office equipment need not be elaborate; all that is required is an amblyoscope (Fig. 6), a stereoscope (Fig. 7), the Wells and Sattler charts and a set of prisms for a small trial frame which can be worn when the stereoscope is used. Gifford has found the Maddox cheireoscope (Fig. 8), and the synoptophore (Fig. 5) of value in starting some patients who could not fuse with the other instruments. The Keystone drawing charts he considers are not of value until some fusion is present, but when this is accomplished they are of great stimulus. The office work is supplemented by home exercises in carrying out orthoptic exercises. The stereo-orthopter (Fig. 9), and the myologic unit (Fig. 10) are motor driven instruments which appeal to many. Booklets are furnished with them.

ORTHOPTIC TRAINING AND SURGERY FOR STRABISMUS: Most writers agree that in the case of strabismics who need surgical correction preoperative and postoperative orthoptic training is very beneficial. Pranger thinks that it is essential as a preparation for operation; the ability to possess some degree of fusion seems to insure a much brighter prospect for successful operation; also the state of disorganization which follows operation seems to be the ideal time of orthoptic training to obtain phoria and from thence to a better cure. Berens and associates, writing of the value of orthoptic preoperative and postoperative training, state that the development of fusion in 31 (69 per cent.) of their 45 operated patients with heterotropia, when six of the 45 were amblyopic, they believe to be a higher percentage of fusion than could have been obtained without preoperative and postoperative orthoptic training. Orthoptic training should be commenced after operation as soon as the eyes can be opened comfortably in eight to ten days.

SUMMARY

An endeavor has been made to describe the routine which I personally believe best, as well as the various methods of other workers, and to give their views as they are found in the literature. It is reasonable to suppose that a plain and simple approach to the subject will be appreciated, and believing this a method of treating cross-eyes has been recorded by some of the most prominent workers in the U. S. A., as well as those abroad. One can readily understand by this survey that many cross-eyes can often be straightened:

First, by properly adjusted distance glasses under atropine.

Second, by bifocal glasses with large inverted segments.

Third, by adding to the above orthoptic training.

Fourth, by surgery followed by orthoptic training.

Ophthalmic surgeons who are familiar with these four methods and practice them should have a larger percentage of satisfactory results than they would have if any one of the four was used alone.

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DISCUSSION

Dr. Burton Haseltine, Chicago: A better review of the literature or more comprehensive outline of the management of cross-eyes than Dr. Fisher has presented could probably nowhere be found. For purposes of clearness his outline of management is of course over-simplified. From his unusually rich experience he knows better than most of us that the clinical problem is not quite so simple. The individual case rarely fits snugly into any schematic frame, but Dr. Fisher's outline will come nearer to covering all cases than any previously presented. This is partly because it is the only one that mentions and assigns a proper place to use of bifocal lenses in the treatment of convergent strabismus. In view of his generous reference to my experience with the method, my discussion will be devoted chiefly to that topic.

The procedure was originally suggested by the late

Dr. George Suffa of Boston, from whom I obtained it in 1912, and it has been a constant and increasingly important part of my treatment of strabismus since that time. I regard it as the most valuable single contribution to this problem since the work of Donders. I therefore welcome Dr. Fisher's effort to make it better known. It is most regrettable that the method is not described in literature nor adequately taught in any school of ophthalmology.

The reasons for using bifocals in strabismus are so simple that most ophthalmologists, on hearing them stated, are surprised that they have not thought of them before. Knowing how the extra demand upon accommodation in hypermetropia prevents binocular fixation and fusion, it seems almost obvious that even normal accommodation effort could be a factor where fixation is poor and fusion impulse weak. Some recognition of this fact is common, as shown by the frequent recommendation to suspend accommodation by prolonged atropinization. But Suffa seems to have been the first fully to appreciate its importance and to think of this extremely effective device to meet the difficulty. His success with it was extraordinary from the first although not as complete as has since been attained with the finer optical work now available. The most important cause of failure in the use of bifocals for young children is that the near segment is not large enough. The bifocal segment as made for adults is almost useless for little children and failure to recognize this explains the indifferent success of a few men who have sincerely tried to apply the method.

It is fundamental that the first step in treating all strabismus is the accurate measurement and proper correction of the ametropia. In those few cases in which perfect binocular function results from this alone, bifocals are of course uncalled for. In the more numerous cases requiring other measures. Dr. Fisher lists bifocals as the first procedure to be employed and in this makes a distinct advance over the methods commonly taught.

One misapprehension which physicians often have on first hearing of the procedure should be clearly corrected; that is, that the bifocals are used in connection with or as an aid to prolonged atropinization. The opposite is true. The bifocals make unnecessary the use of atropine except for the measurement of the ametropia. Occlusion is rendered unnecessary in most cases and where it is required the time is much shortened—a most important consideration.

The use of atropine in the better eye alone is highly effective in improving vision in the amblyopic eye, while at the same time developing instead of hindering binocular function. It should be employed instead of occlusion wherever possible. Every hour that either eye is used alone delays and makes more difficult the development of binocular vision. Atropine in the deviating eye, except for measurement of refraction, is not only unnecessary but highly undesirable.

In this connection, another misapprehension should be corrected, namely, that ciliary spasm may be induced by the proper use of bifocals, whereas the very opposite is true. This error results from confusing the idea of an over-correction with the idea of bifocals. It is not uncommon to prescribe an over-correction of the hypermetropic error for distance wear in the hope that this will correct the convergent squint. This is a failure because it substitutes one refractive error for another, makes comfortable vision impossible and often serves only to maintain a spastic condition. The bifocals make possible the slight under-correction of hypermetropia which should always be prescribed, thus giving vision without strain both for distance and near work and the result is a prompt subsidence of both ciliary and convergence spasm without atropine.

To summarize the things to be accomplished by bifocals, not possible without them:

1. They make possible the establishment of parallelism and development of binocular vision several years earlier—and these are the most vital years in regard to eye function.
2. They make possible a controlled and graduated regulation of the amount of accommodation strain without any of the disadvantages of drug cycloplegia.
3. They remove the necessity for surgery in the majority of cases and greatly reduce the amount of orthoptic training required to obtain perfect binocular fixation.
4. They make possible much earlier discontinuance of occlusion.

Dr. F. M. Whitsell (Chicago): I deeply appreciate the honor accorded me of discussing this paper by Dr. Fisher but am cognizant of my inability to add anything of importance to it. The subject, old in respect of time, as our essayist pointed out, is nevertheless new because of the revival it has undergone in the past five years. Methods have become fairly well standardized in the various clinics in Europe and the United States, but opinions differ somewhat on such points as how long to persist in conservative measures before suggesting operative interference, how much vision the deviating eye must have in order to develop fusion, and how long to occlude one in order to increase vision in the other eye.

I am glad to learn from what we have heard, however, that fundamentals at least have been settled and all are agreed that the process must begin with a cycloplegic refraction—with full correction. Proceeding onward to develop vision in the squinting eye by occlusion, the stimulation of binocular single vision with the aid of prisms, and finally the eliciting of depth perception. Duke Elder points out that any result which does not include this last feature is an imperfect one. He also suggests, and with this I agree, that as soon as fusion has been established and the angle is of moderate or large degree, operation should be performed in order to shorten the course of treatment and make the development of fusional amplitude easier. The objection that this should not be done under general anesthesia and therefore not early should not keep one from performing a 4 or 5 mm. recession of the internal rectus in a convergence excess or a shortening of the external rectus if indicated. This can be planned and executed safely under general anesthesia. The approach to parallelism thus gained

will materially shorten the training period. I have not found that 2/200 or 6/200 is sufficient visual acuity for the act of fusion in my practice. On the other hand we consider 20/50 as the limit for satisfactory training of and permanent holding of useful fusion.

I wonder if Dr. Fisher has had more cooperative patients than I have had, or mothers with a little firmer will. An occluder attached to the lens or soap rubbed on the glass is, it seems to me, unsatisfactory. If we are going to develop vision in an amblyopic eye I believe the occluding must be absolute day and night, and can be accomplished only by a patch and adhesive tape. How long this goes on depends on the patient's improvement and the possible temporary diminution of vision in the covered eye. Our job is to get both eyes as equal as possible, however, therefore as soon as the alternating stage is reached this part of the program is finished.

I do not know much about the use of bifocals in the treatment of strabismus, but I cannot see more than a limited use for them, perhaps in the case of the older school child for convenience rather than treatment. If atropine alone has a tendency to affect parallelism, then usually the prescription for a full correction will do the same.

Dr. George Guibor, Chicago: I think that we should compliment a man of Dr. Fisher's experience for bringing up a subject which those who are surgically minded prefer to omit. I should like to review some facts and observations that have been made in two of the orthoptic clinics in Chicago, and to emphasize some of the points that Dr. Fisher has discussed.

When a squint appears it should be treated as soon as the diagnosis is made. It may appear in an infant as young as six months. In a recent ophthalmic board examination the question was asked, "Suppose a mother brought an infant to you whose right eye turned in for five minutes at irregular times." The answer given was, "Tell the mother not to worry." This, however, I believe is an incorrect answer. Whenever an eye turns in for five minutes there usually is present a convergent squint. It is therefore important to differentiate physiologic deviations from strabismus. The physiologic ocular movements are of a rotary type usually and are bilateral. Those of strabismus are monocular in 80 per cent. of the cases of squint and are convergent. In infants with squint who cannot be given glasses, one drop of one per cent. atropine in the straight eye once a month will lessen the squint in such patients.

As soon as possible determine the errors of refraction by retinoscopy while the eyes are under an atropine cycloplegia. The complete hypermetropia and hypermetropic astigmatism should be corrected. Bifocals are especially useful if the esotropia is greater for near fixation than for distance. An ultex segment "A" or a cement bifocal is used. The bifocal segment should extend up to the lower margin of the undilated pupil. This usually places the upper edge of the bifocal segment above the center of the lens. If such a convex lens is prescribed an accommodative spasm is sometimes produced. Atropine is used to overcome the accommodative spasm.

Thus atropine and bifocal lenses are used to overcome accommodative and convergent overaction. When a patient has a visual acuity of 20/40 with atropine and glasses and only 20/200 when the cycloplegia is not effective, atropine is used to overcome this type of accommodative spasm. Do not reduce the power of distant lenses. Atropine is also used in one eye to produce blurring of vision of the fixing eye in suppression and amblyopic cases. Atropine reduces the time of occlusion. In many cases one must occlude fewer eyes, and one obtains better results than when one occludes the fixing eye without atropinization of both eyes.

I would dislike to recess an internal rectus muscle five millimeters in a child especially before attempting some orthoptic procedures. I should like to show you photographs of patients who have been corrected by non-surgical treatment. I always hope to undercorrect the convergent squints by surgery and complete the correction with glasses, bifocals, atropine and fusion training when possible.

Dr. W. A. Fisher, Chicago (closing): Dr. Haseltine has been of great help to me in changing some of my fixed and erroneous ideas regarding the care of squinting children. I should have known that during the last twenty-five years many oculists who have been in contact with him would be using bifocal glasses, but I did not realize it until my paper was finished. It seems strange that someone did not rush into print with such an important point. Dr. Haseltine's discussion has stressed many points in the paper, especially in exhibiting the style of glasses employed by him at this time. (Figure 1 in the paper describes it better than words.) Dr. Haseltine also stressed a very important point—that bifocal glasses can often displace the continued use of atropine. He also stresses overcorrection, which should never occur.

Dr. Whitsell believes that some form of occlusion would be better than soaping the eye-glasses. Many workers who agree with him are quoted in the paper. I preferred other forms of occlusion until I found soaping the glass was quite practical. Dr. Haseltine's exhibited glasses will interest and make clear large, inverted bifocal glasses.

Dr. Guibor is very enthusiastic in his work; his opinions are of great value, and I do not know of a better orthoptic clinic than the one he operates at the Northwestern University in Chicago. Atropine often continued over long periods may appear to him as indispensable, but if larger inverted bifocals as exhibited by Dr. Haseltine will lessen the period of atropine that Dr. Guibor often uses for this purpose, it would appear to be a step forward in the care of cross-eyes. There should be no spasm of accommodation necessitating the prolonged use of atropine so ably stressed by Dr. Haseltine in his closing remarks. If an over-correction is avoided, continue atropinization would not be necessary for spasm of accommodation.

GYNECOLOGIC RADIUM THERAPY

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QUINCY, ILLINOIS

My assignment to this symposium is the use of radium in gynecology. Obviously, it is impossible to discuss even briefly the various gynecologic uses of radium in the time allowed. Twenty to twenty-five years ago, when the average physician in this audience was graduating from medical school, but little instruction relative to the use of radium was given. In the third edition of Crossen's[1] (Washington University) voluminous "Diagnosis and Treatment of Disease of Women" which was a popular school text at that time, the word "radium" did not even appear in the extensive index and was mentioned only twice in the text. In the chapter "Gynecologic Treatment" we note that "radium and Finsen light are used but little, if at all," and in the chapter "Malignant Diseases of the Uterus" we are informed that in the treatment of carcinoma of the cervix "the effect of radium treatment is practically nil." The above are the only references to radium in the entire text although under the palliative treatment of fibromyoma of the uterus it is stated that intrauterine applications "are dangerous and inefficient."

Little wonder so much ignorance exists today concerning the value of radium therapy in gynecology, when only two decades ago medical students were taught that radium treatment had no place in gynecology. The majority of physicians in active practice today received this instruction and the great pity of it all is many of them still believe what they were taught. It is more difficult to unlearn than it is to learn.

During the past ten or fifteen years the gynecologic uses of radium have been firmly established. The chief advocates of this addition to our therapeutic armamentarium have been the gynecologists themselves rather than the radiologists. The generally accepted present day gynecologic uses of radium are well stated in Kaplan's[2] (New York University) recently published (1937) text "Radiation Therapy." The conditions in which Kaplan advocates the use of radium, within certain limits, are:

Kraurosis vulvae
Angioma of vulva
Carcinoma of vulva
Carcinoma of urethra
Carcinoma of vagina
Carcinoma of uterine cervix
Carcinoma of uterine fundus
Chorionepithelioma
Adenomatoid endometritis
Endometrosis
Uterine fibroids
Functional hemorrhage — menorrhagia and metrorrhagia
Production of sterilization

Since time does not permit a discussion of the uses of radium in all these conditions, I shall confine my remarks to the two gynecologic conditions in which radium has the greatest field of usefulness, viz., non-malignant uterine hemorrhage and carcinoma of the uterus.

NON-MALIGNANT UTERINE HEMORRHAGE

The most common form of non-malignant uterine bleeding is the so-called "functional uterine hemorrhage" (also called idiopathic bleeding, hyperplasia of endometrium, metropathic hemorrhagica).

The intrauterine application of radium in this condition is comparatively simple, and the results, with proper dosage, are excellent. Radium has a dual action in these cases acting on both the uterus and the ovaries. Radium rays have a pronounced reaction on the uterine mucosa itself, destroying the cystic glandular structure. The action on the ovaries is well known. In sufficient dosage radium rays destroy or suppress all the ovarian hormones.

Radium is being used with increasing frequency to control functional hemorrhage in young women in those cases where hormonal therapy has failed. The advantages of using radium over x-rays are: 1. the method permits a diagnostic curettage when the treatment is given; 2. the dosage is easier to control because of the constant rate of irradiation given off by radium; 3. the radiation is placed in direct contact with the pathologic uterine mucosa and in close approximation to the ovaries; 4. there is no variable abdominal wall thickness to interfere with absorption of irradiation; 5. the entire treatment can usually be given with a single application.

Read before the Section of Radiology, at the ninety-eighth annual meeting of the Illinois State Medical Society, Springfield, May 17, 1938.

By special arrangement this article also appears in the November issue of the Radiologic Review and Mississippi Valley Medical Journal.

The above factors are of special importance in the treatment of young women where it is of the utmost importance that only small doses of radiation be given so as not to permanently destroy the ovarian function. A number of competent gynecologists have shown that 200 to 500 milligram hours of intra-uterine gamma radiation is ideal in these cases. Keene[3] (Prof. of Clinical Gynecology, University of Pennsylvania School of Medicine) reported menstruation restored to normal (or nearly normal) in 88% of women treated with radium under thirty years of age while Neill[4] (Gynecologist at the Howard Kelley Clinic in Baltimore) did not fail to control the bleeding in a single case in young women. Dr. Neill[5] recently stated, following nearly two decades of experience, "I am still using this treatment most successfully. . . In the younger women I have also found it possible to reduce the amount of intrauterine radium treatment, giving no x-ray. My experience in these cases, with this type of therapy, has been all that could be desired."

In older women (over 35) the same advantages of radium over x-ray are apparent although both procedures unquestionably give excellent results. At this age, because of the possibility of overlooking an unsuspected malignancy, it is a good dictum to always perform a diagnostic curettage. Since this procedure affords the opportunity to insert radium at the same time, the two procedures can be done with a single hospitalization. The increased opportunity of accurately diagnosing the condition, which only curettage affords, and to give adequate radium treatment with a single trip to the operating table, appeals to many patients.

Our records show that during the fourteen year period of 1924 to 1937 we treated or supervised the treatment of 1,600 patients suffering from non-malignant hemorrhage. At the end of 1934 there were 830 in this group. At that time we succeeded in tracing 510 of these patients who had been treated one or more years previously and found there were 494 clinical cures (96.9%) and 16 unsatisfactory results. It is interesting to note that in this entire series of 510 traced cases, there were only 12 in which the bleeding was not controlled (2.4%).

CARCINOMA OF THE UTERINE CERVIX

Although the gynecologists of this country have practically abandoned surgery in the treatment of uterine cervical carcinoma we still find many general surgeons who are attempting some type of surgical procedure in this condition. Radiation treatment is depended upon entirely for this condition in practically all the large cancer clinics of the world. The so-called Stage 1 growth (where the lesion is strictly limited to the cervix and the uterus is freely movable) is a readily operable condition, but unfortunately it comprises only about 10% of cases when first seen. All are agreed when surgery is attempted, a radical abdominal panhysterectomy (Wertheim) is the procedure of choice. Unfortunately, this carries a high operative mortality, which is shocking in the hands of the surgeon who only occasionally follows this procedure. Weibel[6] in 1,000 cases, had a 13.8% operative mortality, to report the best. On the other hand, there is but little danger, in competent hands, in carrying out the radiation technic; Bowing,[7] with a mortality of only 1.1% in 981 cases, to report the best results. Furthermore, it is not shown that the end results, in the operable cases (Stage 1 and 2) are any better than those obtained by radiation therapy. Weibel,[6] to quote the most successful, had a 40% five year survival in 1,000 cases operated upon, while Regaud and Lacassagne had a 44.7% five year survival in 459 operable cases which were treated with radiation, although in their latest five year series this had risen to 55%.

Another great drawback to surgery, is that over 50% of the patients when first seen have advanced lesions (Stage 3 and 4) in which the surgical treatment cannot even be considered. Furthermore, it is recognized that no more radical surgical procedure than the Wertheim panhysterectomy can be attempted, hence the results of surgery are practically stationary. Radiation therapy, on the other hand, is yearly improving and no one knows what brilliant results the future holds. This is emphasized by the recent publication[8] of the latest five year statistics from The Radium Institute of the University of Paris, one of the leading cancer research centers of the world. The results obtained in the 1930 series are now available and reveal a five year salvage of 46.8% of ALL patients treated that year. *This is, without doubt, the highest percentage of five year cures ever reported for this disease,* considering the method of compiling the statistics, which are as follows:

ALL cases treated are recorded; the treatment was entirely radiological (no operative cases); all had microscopic proof of the disease; all were examined *five years after treatment was begun and found free from cancer;* all patients lost trace of or who died from intercurrent disease during this five year interval were considered cancer deaths as far as the statistical study was concerned.

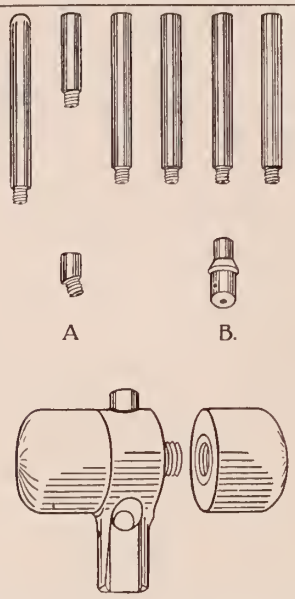


Fig. 1. Individual Parts of Author's Platinum-Silver Uterine Radium Applicator for treating uterine cancer. The applicator can be assembled to treat uterine canals of various lengths. A. Uterine angle wedge, 15°; B. Screw-cap end, threaded for introducing handle, for use without vaginal cross arm piece. (Actual size.)

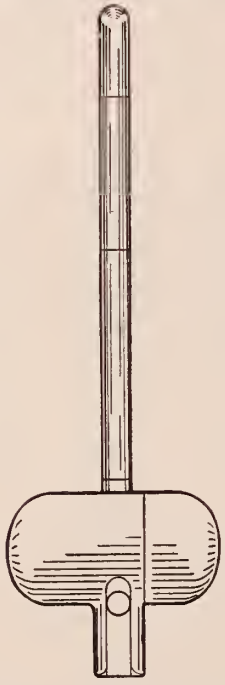


Fig. 2. Author's Platinum-Silver Uterine Radium Applicator assembled (without uterine angle wedge) for use in an average length uterus. The uterine stem is designated for the use of 1 Mm. platinum radium cells, is unusually slender (3.8 Mm.), necessitating a minimum cervical dilatation, and may be covered with one or more layers of ametal rubber.

In 1930, Regaud and Lacassagne at The Radium Institute of the University of Paris, treated exclusively with radiation therapy 111 patients with microscopically proven uterine cervical cancer, representing all stages of the disease. Five years later 52 of these patients were alive and free from cancer, representing a five year curability of 46.8%. (54 were dead from cancer, three were still alive but suffering from recurrent cancer and two had died of intercurrent disease.) Had these statistics been compiled on the basis more commonly used, that is: 1—patients dying from intercurrent disease not being considered cancer deaths; and 2—patients alive but suffering from recurrent cancer not considered as cancer deaths, there would have been a total of 55 alive of 109 treated (the two dying from intercurrent disease being eliminated from the study) or a five year salvage of 50.1%.

The radiation treatment consisted of heavily filtered radium from multiple centers distributed

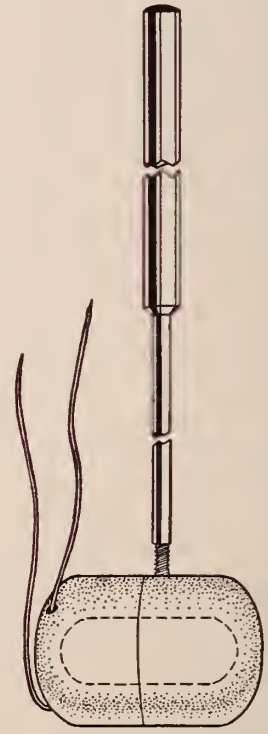


Fig. 3. This is a modification of the original London Vaginal Bakelite Applicator. It is 20x30 Mm. in size, encloses a heavily filtered radium capsule, and is introduced by means of a slender introducing handle into each lateral vaginal fornix. (Actual size.)

throughout the uterine canal and vaginal vault, slowly administered, with the addition of external high voltage x-ray therapy or teleradium therapy in all but the Stage 1 growths. In a typical case Regaud and Lacassagne[9] use 66.6 milligrams of radium, equally distributed between uterus and vagina, (six centers) for approximately 8,000 milligram hours of radiation in five to eight days, the essential filtration we have pursued. Over ten years experience in over 1,200 patients (176 in 1937) have summated in the adoption of the technic shown in the slides to follow.

All statistical studies emphasize the great value of external radiation in supplementing the internal intrautero-vaginal radium therapy in the treatment of uterine cancer. This is usually given by high voltage (200,000 volts)

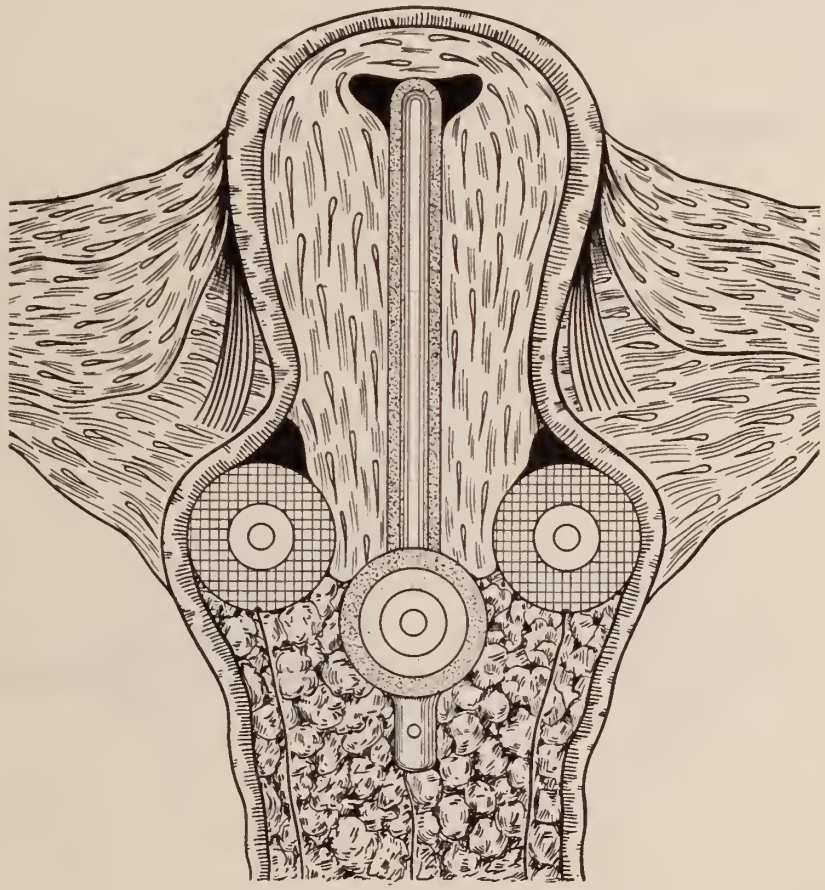


Fig. 4. Illustrating the Author's Platinum-Silver Uterine Radium Applicator (covered with ametal rubber), and two modified London Vaginal Bakelite Applicators in proper position for treating a typical case of uterine cervical cancer in accordance with the Paris (Regaud and Lacassagne) technic. (Actual size.)

being one millimeter of platinum in the uterus and 1.5 millimeters in the vaginal vault.

During the past decade (1928-1937 inclusive) I have treated or supervised the radium treatment of 1,176 patients suffering from uterine cancer. During this period most of these patients have been treated by a modification of the Paris (Regaud) technic mentioned above and we, too, have been enthusiastic with our results. Time will not allow a discussion of the number of modifications of the Paris technic x rays, administered through multiple portals. Todd[10] states, "The general opinion is that x-radiation supplementing radium can improve the five year results from 5 to 10 per cent. Regaud's five year figures increased from 24% in 1927 to 33% in 1932 with the supplementary use of x-rays."

CARCINOMA OF THE UTERINE FUNDUS

Radiation therapy is being used with increasing frequency in the treatment of uterine body

cancer. The results of the surgical treatment compared with the radiological treatment are practically the same, if the same stage of the disease is considered. Recently, Arneson[11] analyzed the results of 998 radiologically treated patients and 927 surgically treated patients. The five year cures of the operable patients treated by irradiation alone, were 53%, the surgically treated patients 57%. He states that the results from hysterectomy alone have been slightly better than from irradiation alone, but the best results were obtained by irradiation followed by

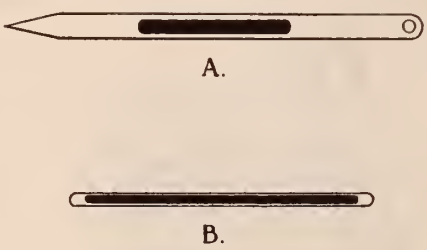


Fig. 5. A. Old Style radium needle containing 10 miligrams, size 1.75x27.5 Mm. with wall thickness of 0.4 Mm. of non-corrosive steel (density 8.7); radium occupies only about one-third of the length of the needle—10 Mm. (Twice actual size.) B. New style radium cell containing 10 milligrams; size 1x20 Mm. with wall thickness of 0.2 Mm. of platinum (density 21.4); radium occupies nearly the entire length of the cell—18 Mm. (Twice actual size.)

hysterectomy; preoperative radiation is apparently more valuable than postoperative and is advocated especially in patients with undifferentiated tumors: the volume of tissue receiving a tumor lethal dose from intrauterine radium is not great and a given dose will be delivered to a greater volume if external irradiation is also employed; a course of high voltage x-rays, preferably administered by a divided dose technic, preceding intrauterine radium is recommended to reduce the danger of forcing viable cancer cells through the lumen of the tubes into the peritoneal cavity and to facilitate insertion of radium by causing regression in tumor size.

It is of utmost importance that every uterine body cancer have a microscopic study of the uterine scrapings as the surgical treatment of Grade IV growths is practically of no avail and these cases should receive irradiation alone. In the other grades, patients should be given the choice of surgery or irradiation if the patient is clinically and technically operable and preferably the combined procedures should be used. Patients with extension of the disease beyond the limits of the uterine myometrium should be considered inoperable. If irradiation is the choice, it is of the utmost importance that internal radium therapy be combined with adequate external irradiation, if the best results are to be obtained. If the patient is clinically or technically inoperable both internal radium and external irradiation should be used.

CONCLUSIONS

1. Radium therapy is a valuable addition to our armamentarium in the treatment of certain gynecologic conditions.

2. Radium has its greatest gynecologic use in the treatment of certain forms of benign uterine hemorrhage and in uterine cervical and body cancer.

3. Radium and x-rays are not competitors to surgery, all being useful methods which require intelligent selection for application.

4. All patients suffering from uterine cervical cancer should receive intensive intrauterovaginal radium therapy and if the growth is beyond Stage 1, the treatment should be supplemented with external irradiation.

5. All patients suffering from uterine body cancer preferably should receive combined internal radium and external irradiation in addition to a panhysterectomy (preferably also bilateral salpingo-oophorectomy) if the patient is clinically and technically operable. If irradiation is to be depended upon alone to control the disease, or if the growth is inoperable, both

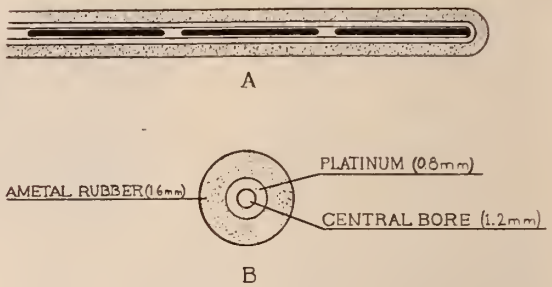


Fig. 6. A. How the new style radium cells appear when placed in the uterine stem of the author's new platinum applicator (shown covered with 1.6 Mm. of ametal rubber). Note that there is almost an interrupted source of radium along the entire length of the applicator assuring uniform radiation throughout the entire length of the uterine canal. (Actual size.) B. Cross section of uterine stem of author's new platinum applicator covered with ametal rubber. (Twice actual size.)

intensive internal radium and adequate external irradiation should be used.

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TABLE 1

UTERINE CERVICAL CANCER—1930 SERIES—5 YEAR RESULTS AT THE UNIVERSITY OF PARIS (REGAUD AND LACASSAGNE)

	Patients Treated	% Each Stage	Cured End 5 Yrs.	% 5 Yr. Cures
Stage 1*	16	14	12	75
Stage 2	34	31	19	55.9
Stage 3	47	42	16	34
Stage 4	14	13	5	35.7
Total	111	100%	52	Aver. 46.8%

*The stages of the disease are those outlined by the Radiological Subcommission of the League of Nations.

TABLE 2

RADIATION VERSUS SURGERY IN UTERINE CERVICAL CANCER

One hundred patients suffering from ALL stages of cervical cancer, seeking the best surgical or irradiation treatment should show the following end results:

Treat.	No. of Patients	Accepted for Treatment	Per Cent 5 Year Cures	Treatment Mortality	Alive End of 5 Years
Surgery	100	40	40% (Weibel) (Stages 1 & 2)	13.8%	16
Radiation	100	95	40% (Regaud) (Stages 1, 2, 3, 4)	1.6%	38

The results from radiation therapy are, therefore, nearly 150% better than from surgery. The radiation 5 year cures for Stage 1 and 2 growths were 55% at Regaud's clinic (compared to 40% for surgery by Weibel). For Stage 3 and 4 growths Regaud had a 26.5% salvage, with no hope from surgery for this inoperable group.

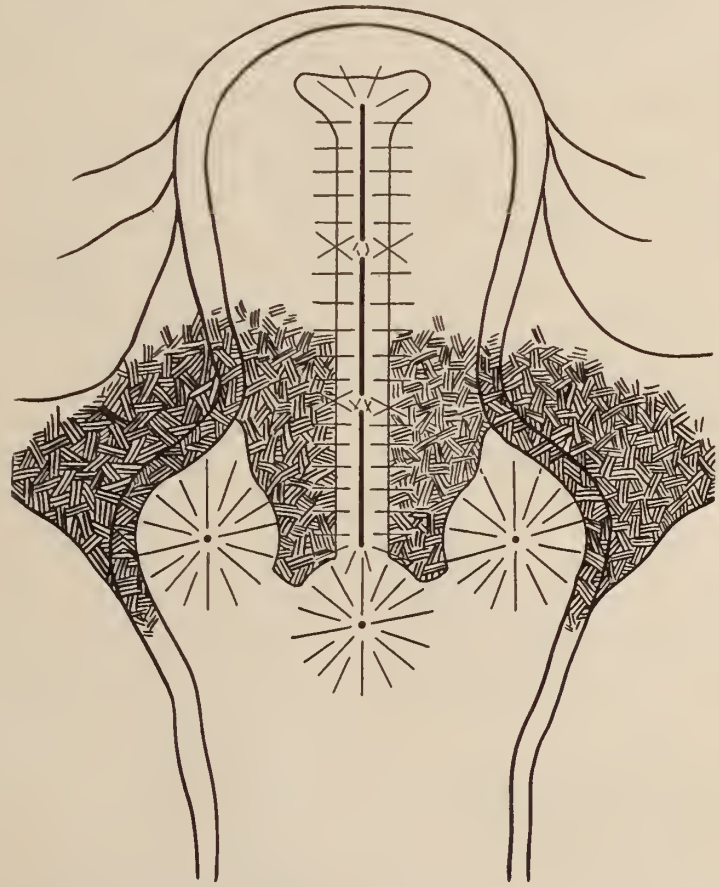


Fig. 1. A schematic drawing showing a Stage 3 uterine cervical carcinoma, the type most commonly present when the patient presents herself for treatment. The position of the raidum cell centers, in accordance with the Paris technic, are shown in the uterine canal and vaginal vault, thus radiating the entire uterus, cross-firing on the cervix and sending radiation into the parametria. This technic is readily carried out with the author's uterine radium applicator with the addition of a vaginal colpostat or London vaginal bakelite applicators. (Actual size.)

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X-RAY THERAPY OF THE UTERUS AND ADNEXA.

EDMUND P. HALLEY, M. D.
DECATUR, ILL.

Gynecologic neoplasms, especially when malignant, pose the question, "Surgery, radium, or x-ray therapy?" The problem is somewhat comparable to that of luetic therapy, "Mercury, arsenic, or bismuth?" The stage of the disease, the make-up of the host, physical and economic idiosyncracies, all bear upon the optimum answer. But basic principles deserve respect, hence this paper proposes to review some of these basic concepts.

Surgical extirpation, if complete and inclusive of all metastatic extension of malignant tissue, is unquestionably an ideal attack. But in actual practice cancer patients are rarely seen at a stage when such complete eradication by the scalpel is possible, even in the hands of a surgical master. Then too, radical operative procedures carry a large primary mortality, so it is small wonder that men like Doderlein, Kelly, Crossen, and Novak early gave their wholehearted support to radiation treatment of uterine cervix carcinoma, having found that results in all stages of this disease showed as high a cure rate from radiation as the best surgery could show in selected stage I and stage II cases. Such results were achieved principally with local radium applications, most commonly intra-cavitary (uterine and vaginal), occasionally by additional interstitial needles or seeds.

Fortunately for many patients, radium application fell within the capacity of the family doctor, so that many women received care that would otherwise have been denied to them, for only the most skillful surgeon could do a competent Wertheim operation. Unfortunately, mail-order prescribing has encouraged the empirical use of radium by many who have neglected to acquire some comprehension of the physical and biologic characteristics and limitations of this potent weapon. It is amazingly true that scores of general surgeons do not know what filtration they may be using, nor do they have even a suspicion as to what its influence is on effective dosage. Regardless, the patients are many who have been given added months of comfort and not a few have been cured, who otherwise could not or would not have sought more competent care in the tumor clinics.

But failures are far too frequent even among the cases receiving supposedly adequate radium therapy. We have all seen instances where the primary lesion has been completely controlled, the cervix rendered void of carcinoma cells even to the most careful search by serial section, yet the patient went on to die from metastases. Two of our cases emphasize this. Both showed complete eradication of the primary lesion by irradiation. One died of uremia from bilateral ureteral obstruction by carcinomatous lymphadenopathy just below the pelvic inlet. The other died of perforation of the iliac colon where left parametrial metastases had invaded it. There were no distant metastases. These tumors were radiosensitive as evidenced by complete control in the cervix, but the patients were lost because of pelvic extension. Radiation was adequate for the primary lesion, but the daughter cells outside the cervix were not controlled.

One important factor in this failure is to be found in the physical distribution of radiant energy, the intensity of which diminishes inversely as the square of the distance from the

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source. Because of limited supply radium has been used almost exclusively at close range. Thus, of the dose delivered at 1 cm. from the radium element, only one-fourth reaches to 2 cm., one-ninth to 3 cm. and one-sixteenth to the 4 cm. level. Therefore, a cancericidal dose throughout the cervix is accompanied by very much less than enough to damage tumor cells in the outer portions of the adnexa. Conversely, if a large enough dose were to be built up by intra-uterine radium to effect tumor cell destruction in the outer adnexa, the cervix and uterus would be almost completely destroyed with probable necrosis into both rectum and bladder.

Dosage distribution curves worked out by Arneson[1] visualize this very nicely. Figure 1 shows the distribution by iso-dose curves

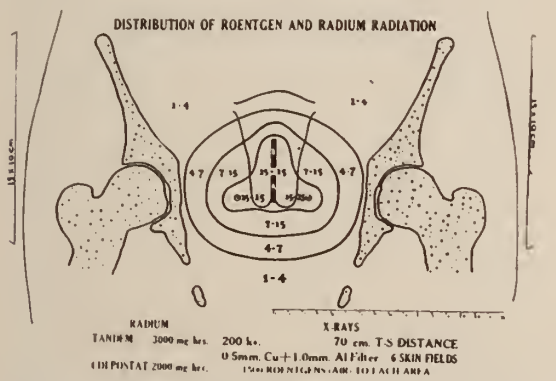


Fig. 1. Iso-dose curves for radium radiation in terms of T.E.D. (From Arneson.)

achieved with the Paris type of application, that is, an intra-uterine tandem with a colpostat laterally in the vaginal fornices. The numbers indicate threshold erythema doses* after the Memorial Hospital method of dosage designation. Healy, Arneson, and Stewart[2,3] found a minimum of six to eight such equivalent doses necessary to completely destroy the primary tumor. On this basis, only that portion of the parametria within about 3.5 cm. distance from the uterine canal receives an estimated cancericidal dose. In the adjacent zone, where four to seven T.E.D. are accumulated, there is no doubt appreciable damage to tumor cells. This means, however, that noteworthy effects are limited to within 5 cm. distance of the center of the uterus. Beyond this not much deterrent action can be anticipated. Applicators which place the vaginal radium below instead of lateral to the cervix show even less efficient parametrial dosage.

To improve dosage to the parametrium, let us investigate external irradiation methods which include teleradiumtherapy (by a large radium pack at 10 or 12.5 cm. distance) and roentgen irradiation. Since large units of radium are so few in number, whereas x-ray equipment of 200 kilovolt or greater capacity is becoming more and more common, we will consider only roentgen therapy factors.

X-ray dosage distribution within the average female pelvis has been studied quite thoroughly by Quimby and Arneson[4]. Variations of port size and number and the effects on depth dose of varying the tube-patient distance were analyzed. With the factors of 200 Kv.P. and filtration of 0.5 mm. Cu plus 2.0 mm. Al, the most efficient and uniform distribution was obtained at 70 cm. focal-skin distance with six ports, each 10x15 cm. two anterior, two posterior and two lateral. Through the anterior and posterior ports the beam was directed vertically into the adnexa and not angled toward the cervix. A space of 2 cm. between the midline margins appreciably reduced the dose delivered to bladder and rectum. Figure 2 shows Arneson's computations for 1500 "r" (air beam) per field for

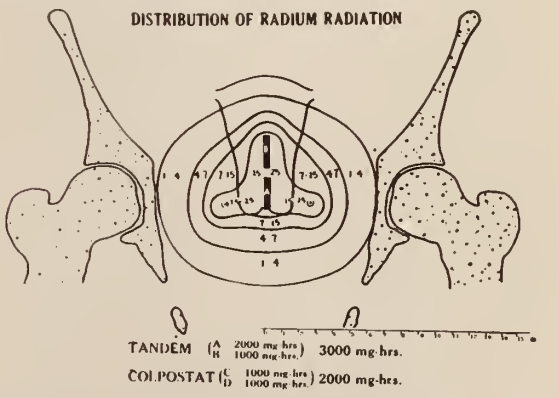


Fig. 2. Iso-dose curves in T.E.D. for Roentgen radiation with the factors indicated. (From Arneson.)

this six port technique expressed in terms of threshold erythema doses delivered within the pelvis. The figures on this chart are not large,

*The threshold erythema dose is approximately 525 roentgens (air) for 200 Kv.P. x-rays with 0.5 mm Cu filter for a 100 sq. cm. field. For radium, the T.E.D. is about 225 mg.-hr. for a tube 2 cm. long at a distance of one centimeter and with filter of 0.5 platinum.

but if we combine these radium and x-ray dosages, as shown in Figure 3, we find that area receiving cancericidal dosage of seven or more threshold erythema dose equivalents is extended

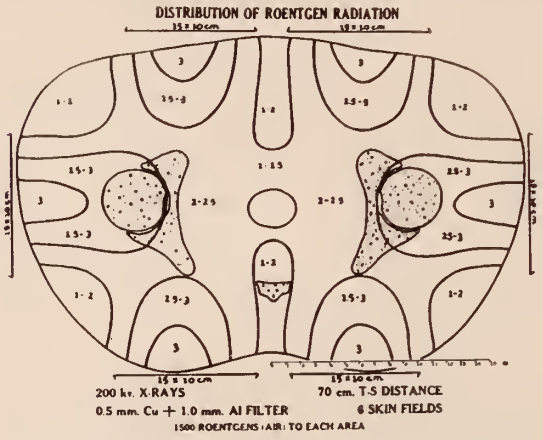


Fig. 3. Iso-dose curves in T.E.D. for combined radium and Roentgen radiation, with the factors indicated. (From Arneson.)

substantially farther into the parametria, and the zone in which definitely deterrent influence is exerted is carried outward to the pelvic wall. Thus on a purely physical basis, there is excellent evidence favoring roentgen radiation as a complementary modality with radium in treatment of carcinoma of the uterine cervix.

Biologically, another factor must be considered, distribution of dosage in respect to time. Radium is usually given in relatively low intensity, continuously over a period of three to five days. X-ray, under the influence of Coutard, is more often applied over comparatively long periods, by giving small fractions daily throughout four to eight weeks. Apparently, this practice adds a factor not directly measureable in simpler physical units. These small daily doses, frankly not of cancericidal proportions, seem, as demonstrated by Melnick and Bachem,[5] to produce a progressive deterioration of succeeding generations of daughter cells that leads ultimately to giant cell formation with inability to continued survival. Everyone who has treated cervical carcinoma by x-ray alone, or as a preradium measure, has repeatedly seen large, bleeding, fungating tumors melt down and the cervix returned almost to normal in the presence of doses that are certainly far less than the supposed cancericidal dose. On the basis of the Arneson and Quimby charts scarcely more than a fourth or fifth of the estimated necessary minimum dose could have been given. Even allowing for a wide range of radio-sensitivity within a single tumor, time distribution of dosage would seem to be a significant factor.

Incidentally in this connection, it is well to remember that pre-radium roentgentherapy frequently makes possible easier and more satisfactory placing of radium applicators. An upper vagina, narrowed and stiffened by cancerous or inflammatory changes, can be softened to permit better placement of the colpostat, and, more important, permit more effective packing away of the bladder and rectum from the radium sources.

For clinical confirmation of these theoretical considerations one might point out that Heyman[6] at the Radiumhemmet, where for years only radium was used in treatment of uterine cervix carcinoma, now is using supplemental roentgen therapy routinely in all cases. It is standard practice by Regaud and Lacassagne at the Radium Institute in Paris. Baclesse,[7] in Coutard's clinic, achieved a 36% five year survival rate for stage III solely by x-irradiation, using doses totalling 13,000 to 14,000 "r" over 35-50 days of treatment. To the best of my knowledge, all of the large tumor clinics in this country routinely use x-ray before and/or after radium application, and in many of the Stage III and IV cases rely solely on roentgen-therapy for palliation with not infrequent cures resulting.

These concepts are not new, but the practicing radiologist is almost daily re-amazed by the general medical and lay ignorance of or indifference to the advantages of combined radiation techniques. It needs to be repeatedly emphasized that x-ray and radium radiations are the same kind of energy, with closely comparable biologic effects, and differing principally in the space distribution of their zone of influence. Radium operates intensively in a small area close to the applicator, and the effects decrease very rapidly as the distance from the source is increased. X-ray provides tremendous amounts of a similar energy, which can be used at substantial distances from the source to obtain more uniform dosage through larger bodies of tissue. True enough, radium, in a small fraction of its radiant energy, produces rays of much greater penetrability than can be obtained with the hardest

rays of our largest x-ray equipments. But radium furnishes its energy at a fixed low rate so that all of the refined radium in the world, if gathered in one bomb, would still provide no such magnificent volume of radiant energy as does almost any of our modern x-ray generators. So, for practical purposes, let us think of radium as the small source of radiant energy for local application with efficient results limited to a narrow zone, and of x-ray as a large volume agent for more uniform effects through large masses. Perhaps we can apply this concept to some of the other problems of gynecology.

Carcinoma of the uterine fundus is generally slower to metastasize than that of the cervix. Thus surgery, by removing the tumor bearing tissue with hysterectomy, has achieved enviable results. However in the early case that is a poor operative risk, intra-uterine radium frequently effects control of the disease because all the tumor cells lie close to the applicator. But in the more advanced case, with tumor cells escaping to the parametrium, supplemental roentgen irradiation can extend the zone of control, and may mark the difference between success and failure. In the borderline operable case can any gynecologist by any of our present methods of examination be sure that early metastases are not already taking place? Pre- or postoperative x-irradiation should help control many of these cells which the scalpel cannot reach. Heyman[8] has reported that of 63 such patients postoperatively irradiated, 50 were alive and symptom-free five years after treatment. Compare this rate of 79.4% with 55.3% cures in clinically operable cases. and with 41% in technically operable cases which were treated with radium only, all cases in the same author's hands. Healy[9] believes from his experience and observation at Memorial Hospital. "that adequate radiation therapy alone in the less favorable cases or preliminary to panhysterectomy in the surgically operable cases always should be the routine procedure." Here again, x-ray furnishes our weapon of attack upon the more diffuse parametrial zone; surgery and radium the weapons for the uterus.

Applying our x-ray-radium distribution pattern to the problems of so-called benign uterine hemorrhage is more apt to reverse the emphasis with radium the favored modality. Let us assume that curettage has been done so that we can be reasonably certain malignancy is not present. Benign endometrial disease can be considerably benefited by radium applications. Yet because radium exerts its principal effect close to the source even so sensitive a tissue as the ovary need not be damaged. Doses of not over 600 mgm-hrs (filtered with 0.5 mm platinum or equivalent) will frequently control hemorrhage without permanently depriving the woman below 35 of her ovarian function. External irradiation can scarcely influence an intra-uterine disease before considerable damage to ovaries has resulted. Hence in the benign conditions x-radiation should be the method of last resort only. Premature menopause is never to be undertaken lightly.

It follows, similarly, that in younger women fibroids should be a surgical problem as only by this method can the ovaries be preserved. Mechanical discomfort, rapid growth, toxemia due to necrosis, and in older women the need to rule out carcinoma, all argue for surgery. Only when the patient with fibroid is not operable can radiation be properly considered. Then application of our space distribution yardstick says x-ray. Only the submucous fibroid and the small intramural ones will receive enough radiation from an intra-uterine radium source to justify its use. For the most of fibroid tumors roentgentherapy through two or four ports makes for a more appropriate energy distribution to the tumor and its bed.

While we are discussing gynecologic problems there is one condition, which, though rare, has recently been showing such excellent results from roentgen treatment as to deserve mention in passing. That condition is tuberculosis of the female genital tract. Lenz and Corscaden[10] report some of their results with the conclusion that x-ray therapy in small doses is superior to surgery in cases of tuberculosis chiefly localized to the pelvis, where there is no ascites and little or no tendency to breaking down. It is useful as a postoperative measure in cases with ascites. Heyman has stated[6] that "x-ray can save many of the postoperative cases with fistulae who usually die. If confined to the abdomen or pelvis, one gets spectacular results." He emphasizes the importance of small doses, with plenty of time for any reactions to be allowed to subside. These are encouraging reports.

To summarize our main thesis, roentgen therapy on grounds theoretical and by clinical dem-

onstration deserves a larger place in the cognizance of the practicing clinician. The scalpel, radium, and x-ray are all in a way forms of surgery. The scalpel locally excises diseased tissues but must sacrifice a variable margin of normal with it. Radium locally and often with microscopic selection destroys diseased tissue with minimal damage to the normal. Roentgen irradiation gives a widespread attack on diseased tissues beyond the reach of either scalpel or radium, while maintaining microscopic delineation by its greater effects on neoplastic as compared with normal tissue. Awareness of these essential differences makes for better selection of the program which will offer the greatest likelihood of success in any given case.

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DISCUSSION

Roswell T. Pettit (Ottawa, Ill.): I would like to criticize the statistics as presented by Dr. Swanberg. With 265 doctors and only fifty-four per cent. reporting, I would not say those statistics were worth very much. I would criticize these statistics because of their incompleteness and also because these reports made from these physicians were not controlled.

Dr. W. I. Lewis, Herrin, Ill.: I should like to ask Dr. Swanberg regarding the usual dose of radium given in cervical carcinoma. Is it usually around seven to eight thousand milligram hours exposure? What is the lethal dose for each square centimeter of cancerous tissue? Has that been determined? Is it your experience that the most successfully treated cases are those treated heavily with the first dose and not to depend upon any subsequent radiation treatment?

Dr. Swanberg (closing the discussion): In regard to the criticism of the statistical data for non-malignant bleeding cases I want you to know that I merely put this slide in incidentally. Since we were only able to secure the cooperation of fifty-four per cent. of the physicians who controlled these patients we naturally can only report what fifty-four per cent. told us and it was these results that were tabulated on the slide.

As to the most effective radium dosage per square centimeter in the treatment of uterine cancer I cannot definitely state. I believe, however, that it has been proved that it is necessary to give seven erythema doses of radiation to successfully destroy squamous cell cancer. In treating a Stage 3 cervical cancer, which is the most common type, Regaud and his coworkers have found that it requires 8,000 milligram hours of irradiation distributed in accordance with their methods to successfully control the disease.

There has been considerable discussion as to what actually constitutes the Paris technic of radium therapy. In order to settle this matter I briefly wrote up a description of the technic as I thought it to be and sent it to Dr. A. Lacassagne of The Radium Institute of the University of Paris, for his criticism and suggestions. This was returned to me with a few corrections and I am, therefore, distributing at this meeting Dr. Lacassagne's "OKED" description of the method. You will note that at The Radium Institute of Paris they only use a total of thirty-three and one-third (33⅓) milligrams of radium in the uterus and the same amount in the vagina and that they have made no change in the amount of radium used for many years. The only changes in the radium technic that have been made within recent years is the fact that they no longer use aluminum covering for their applicators, and have increased the size of the vaginal applicators in order to give a better depth dose. Formerly the vaginal applicators were fifteen millimeters in diameter and now they are using them twenty millimeters in diameter. The primary filtration in the uterus and vagina are the same as that used heretofore, that is, one millimeter of platinum in the uterus and one and one-half millimeters in the vagina.

The Marie Curie Hospital in London, where they used radium exclusively for cervical cancer for a number of years, published some excellent statistics showing thirty-three to forty per cent., five-year survivals. Within recent years they have added high voltage x-ray therapy to their radium technic and it will be interesting to note in a few years' time what percentage of cures they are reporting.

As you know Regaud uses both radium and x-ray in all cases except in the so-called Stage 1 growth where radium is used exclusively. The x-ray technic that Regaud follows, however, is difficult to duplicate in this country, because he insists that the x-rays be administered slowly, giving the patient from one to two hours treatments each day for four to six weeks. The radium treatment is also administered slowly requiring from five to eight days to administer the 8,000 milligram hour dosage.

There is no question that the life of the patient greatly depends upon the intensity of the first radium treatment and if this dosage is adequate and the tumor sensitive no further radium treatment is necessary in most cases. Another procedure that has been changed in recent years in Paris is the fact that they no longer give the whole x-ray cycle before the radium treatment is administered. The plan now is to give one-half of the cycle before the radium treatment is administered and then give the other half after the radium treatment has been completed. It has been found that if the entire cycle is administered before the radium treatment is administered there is fre-

quently such a marked shrinkage of the vaginal vault that applicators cannot be satisfactorily placed. They now feel in Paris that two or three weeks after the institution of the x-ray treatment is the optimum time to use the radium and in this interval the patient also receives daily vaginal douches.

Dr. Halley (closing the discussion): The question of pain brings up a subject that is more or less a chronic irritant to the radiologist and is going to be a larger irritant as our doses climb in our efforts to find the top limit of safe radiation, namely, late skin changes. You can usually get the referring physician to aid you in controlling the patient during the early skin reaction, but when the late changes come about, the patient comes in and says, "Dr. ——— says you burned me." Yes, the patient was burned, but it is a sound procedure and certainly it is justified if the mutilation by radical amputation of the breast is justified. It seems to me that many of these patients who live to regret skin changes are just that fortunate because they probably would not be here without them. I think it is a subject which is going to receive a great deal more attention with larger doses. You see appearing in the literature a moderate number of cases of damage to the bowel, but in the series they come from, they constitute a surprisingly small per cent.

I think much help can be given the radiologist in the attack on the cancer problem by a little more open-minded cooperation from the general practitioner who has to live with these patients. I know it is a trial but certainly the results make it worth while in many cases.

STUDIES ON MERCURIAL DIURESIS

Esidrone, A New Mercurial Diuretic

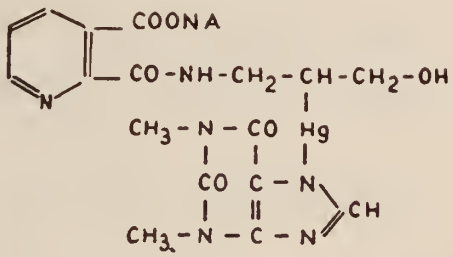
ITALO F. VOLINI, M. D. AND
ROBERT O. LEVITT, M. D., CHICAGO

A. Introduction. While diuretic drugs should be considered only as adjuvants to other methods of treatment of edema, the frequent failure of digitalis and rest in the therapy of congestive heart failure renders the organic mercurials the most important agents in the physician's armamentarium.

The effectiveness in producing rapid improvement of the patient, together with the disappearance of the necessity for the use of skin punctures and Southey's tubes, and even a decrease in the frequency of recourse to paracentesis, mark the introduction of mercurial diuretics as the most important advance in cardiac therapy since the discovery of digitalis. Although these drugs are usually employed in the advanced stages of heart failure when dropsy is pronounced, they are of considerable benefit to patients who have minimal or even indetectable edema.[1] Vital capacity is often increased immediately following their administration, as shown by Alsever and Levine.[2]

Since Saxl and Heilig[3] in 1920 described the excellent diuretic effect of the organic mercurial compound merbaphen, several somewhat similar drugs have been introduced in the last fifteen years. We are reporting the clinical use of a new compound, esidrone.

B. Chemical Description of Esidrone. This new compound is described as the sodium salt of pyridinedi - carboxy - B - mercuri(o)hydroxypropylamide-theopylline with the following structural formula.



It is a stable, neutral, crystalline substance which is readily soluble in water. It contains 31.2% mercury in non-ionizable form and 28% theophylline which is chemically connected with the mercury molecule.

C. Pharmacological Properties. These have been reported by Hartman and Panizzon[4] and Uhlmann.[5] Esidrone has a marked diuretic action in the rabbit and the dog. While several investigators[6] working with salyrgan report hemoconcentration as the effect on the blood, in both the initial and later stages of the diuresis, the pharmacological evidence with esidrone indicates the development of a pronounced hydremia as the initial effect during the latent period before the increase in urinary excretion. Later, hemoconcentration is demonstrable as the urinary output begins. A marked chloride elimination occurs with the diuresis including sodium and the other constituents of the urine. The mercury fraction of this compound is rapidly eliminated, 91% appearing in the urine eight hours after injection, probably thus accounting for the infrequency of toxic effects. The minimum lethal dose of the drug in rabbits is 0.2 gm/kg when injected subcutaneously and 0.025

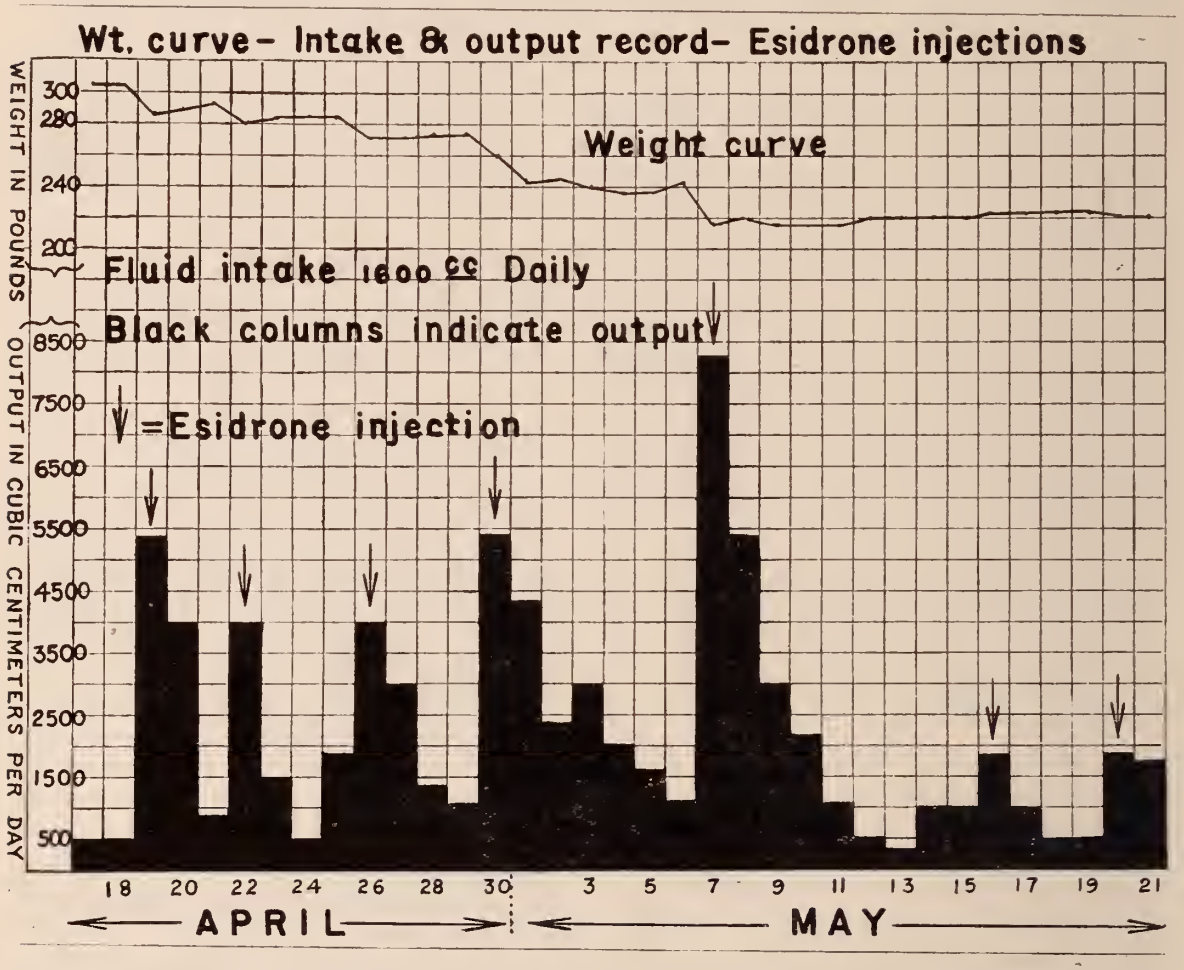
From Cook County Hospital, Chicago, and the Department of Medicine, Loyola University School of Medicine.

This investigation was aided by a grant from the Ciba Pharmaceutical Products, Inc.

mg/kg intravenously. As shown by Herrman and Deebled,[7] the zanthine derivatives probably increase glomerular filtration and mercurial compounds diminish tubular reabsorption. Theoretically, the combined action of both should enhance the diuresis. Such chemical and pharmacological properties reside in esidrone.

D. Method of Study. Patients were selected for this study. Extremely weak, debilitated, cachetic, thin and aged subjects were not used. Those who showed severe kidney damage were discarded. All were on our cardiac regime, bed rest with a diet consisting of 1683 calories, carbohydrate 215 gms., protein 55 gms., fat 67 gms., NaCL 0.985 gms. with total twenty-four hour fluid intake of 1600 cc., this including the calculated water content of the foods. Potassium chloride was given at meals. Digitalis and ammonium chloride were used on most patients with morphine and phenobarbital for sedation. A base line of urinary excretion of three days was generally sought before esidrone was employed except where such delay would result in too great a danger for the patient. Daily weight records with twenty-four urinary output calculation were used. Esidrone was administered practically always intravenously. The dosage most frequently employed was 1 cc. although many injections of 2 cc. were used.

E. Results. The latent period before urinary activity varied from one-half to two hours. The major diuresis was usually secured in eight or nine hours, so when the administration was in the morning the patients were not disturbed the same evening or night. Carry over activity was noticeable to the third day following administration. Chart No. 1 indicates this effect. The total number of patients used in this study was 35 who were given 125 injections. The maximum number of injections to one subject was 17, another 14. Several patients received only one dose. The etiologic heart disease represented comprised hypertensive and arteriosclerotic, rheumatic, luetic, chronic cor pulmonale,



thyrotoxic. Five patients with alcoholic cirrhosis and ascites are not included in the above series of 35. The following tabulations summarized the diuretic response in five patients.

CHART 1.

Total number of patients—35.
Total number of injections—125.
Maximum number of injections to one patient—17.
Minimum number of injections to one patient—one.
Average diuresis for one injection—3450 cc. (This includes both the 1 cc. and 2 cc. dosages.)
Maximum diuresis from one injection in 24 hours—8300 cc.
Minimum diuresis from one injection in 24 hours—1000 cc.
Maximum weight loss from diuresis—119 pounds in 66 days.
Percentage increase of urinary output induced by esidrone:

Injection	Per. Inc. 1st day	Per. Inc. 2nd day	Per. Inc. 3rd day	Per. Inc. Total 3 days
Wm. S. First Series—				
1	1000	450	343	1793
2	80	50	25	155
3	600	400	60	5060
4	650	216	166	1032
5	300	0	25	325
6	220	70	..	290
7	160	75	40	275
8	700	428	200	1328
9	300	150	No Inc.	450
W. S. Second Series				
10	650	238	112	1000
11	350	109	90	549
12	330	120	70	520
13	500	270	77	847
14	860	600	180	1640
J. S.				
15	350	156	124	630
A. F.				
16	1080	800	180	2060
17	500	200	84	784
18	225	166	77	468
19	490	390	200	1080
20	700	450	250	1400
21	180	100	50	330
22	270	250	114	634
23	1000	500	166	1666
24	180	145	100	425
25	428	314	284	1026
26	380	300	150	830
A. O.				
27	1200	140	70	1410
28	570	100	100	770
T. G.				
29	500	333	133	966
30	200	150	50	400
A. S.				
31	1100	500	300	1900
32	550	275	125	950

The records of these five patients are illustrative of the activity of esidrone. These are given very briefly, only the essential pertinent facts, findings and laboratory data being furnished.

1. A. F., white male, 55 years of age, railroad switchman, admitted to Ward 63 on 4/16/38, with a complaint of severe shortness of breath and generalized swelling. The history dated back two years with gradual progression and no response to digitalis and other standard treatment. The weight increase amounted to over 100 pounds. The patient was in severe congestive heart failure with generalized anasarca, with enlargement of the heart to the left and distant muffled heart sounds. The diagnosis was hypertensive and arteriosclerotic heart disease. His weight was 305 pounds. The pertinent laboratory evidence was urine 3 plus albumin, Kahn 1 plus, blood urea 23 mg. per cent CO_2 combining power 50 vol. per cent. The EKG showed left axis deviation with low voltage. Venous pressure 320 mm. He was placed on the cardiac regime without ammonium chloride but no digitalis was given. The urinary output varied from 500 to 1,000 cc. On:

4/19/38 Esidrone 2 cc. output 5300 cc.
4/22/38 Esidrone 2 cc. output 4000 cc.
4/25/38 Esidrone 2 cc. output 4000 cc.
4/26/38 Ammonium chloride 2 grams t.i.d. started.
4/29/38 Esidrone 2 cc. ouput 5300 cc.
4/30/38 Paracentisis abdominis; only 700 cc. obtained.
5/6/38 Esidrone 2 cc. output 8300 cc.

Patient complained of dysuria and frequent bowel movements. Red blood cells found in the urine.

5/7 Ammonium chloride discontinued.
5/6 Urine clear—No symptoms of dysuria or diarrhea. Esidrone 1 cc. output 1800 cc.
5/18 Diuretin gr. LX. No change in output.
5/20 Esidrone 2 cc. ouput 1900 cc.
5/27 Esidrone 2 cc. output 3500 cc.
5/28 Paracentesis abdominis 2500 cc.
5/31 Esidrone 2 cc. output 3000 cc.
6/4 Esidrone 2 cc. output 2000 cc.
6/7 Mercupurin 2 cc. output 2000 cc.
6/8 Ammonium chloride 2 grams q.i.d.
6/11 Esidrone 2 cc. output 3000 cc.
6/15 Esidrone 2 cc. output 5700 cc.
6/20 Esidrone 2 cc. ouput 6000 cc.
6/22 Weight 186 lbs.—a loss of 119 lbs.

2. A. O., white female, 60 years of age was admitted on 2/1/38 with complaints of orthopnea and severe edema of several months' duration, with a history of extreme nervousness for many years, aggravated by psychic shocks. The essential physical evidence was the startled facial expression due to proptosis, all the signs of thyrotoxicosis with a large right thyroid lobe and severe general anasarca. The heart border extended to the left anterior axillary line and there was auricular fibrillation corroborated by the electrocardiogram. The B.M.R. was 60 plus. The diagnosis was thyrotoxic heart disease.

On 2/5/38 she was given 0.5 mgm. strophanthin intravenously daily.

2/11 Salyrgan intravenously 2 cc. output 1500 cc.
2/15 Esidrone 1 cc. intravenously output 6000 cc.
2/21 Esidrone 1 cc. intravenously output 4000 cc.
2/24 Salyrgan 2 cc. intravenously output 2000 cc.

Later a thyroidectomy was performed but the auricular fibrillation persisted, although congestive failure did not return.

3. J. S., male, Chinese, 51 years of ago admitted on 5/11/38 with severe congestive heart failure with pronounced epigastric pain. He had been admitted three times previously for somewhat similar complaints always with a history of severe cough of many years' duration. The cyanosis was extreme with severe general anasarca and dyspnea. The examination revealed the loud systolic murmur of tricuspid insufficiency with a very large, tender, pulsating liver. The venous pressure was 330 mm. The red count was 8,020,000 and Hg, 108 per cent. The EKG showed marked right axis deviation. The diagnosis was chronic corpulmonale due to chronic bronchitis and emphysema, severe congestive heart failure of the right ventricular form with compensatory polycythemia.

The cardiac regime was instituted with digitalis and ammonium chloride. No improvement noted. 5/16/38 esidrone 1 cc. with output 4,500 cc He rapidly improved without further therapy and was discharged 6/18/38 edema free, still coughing with a weight loss of 29 pounds.

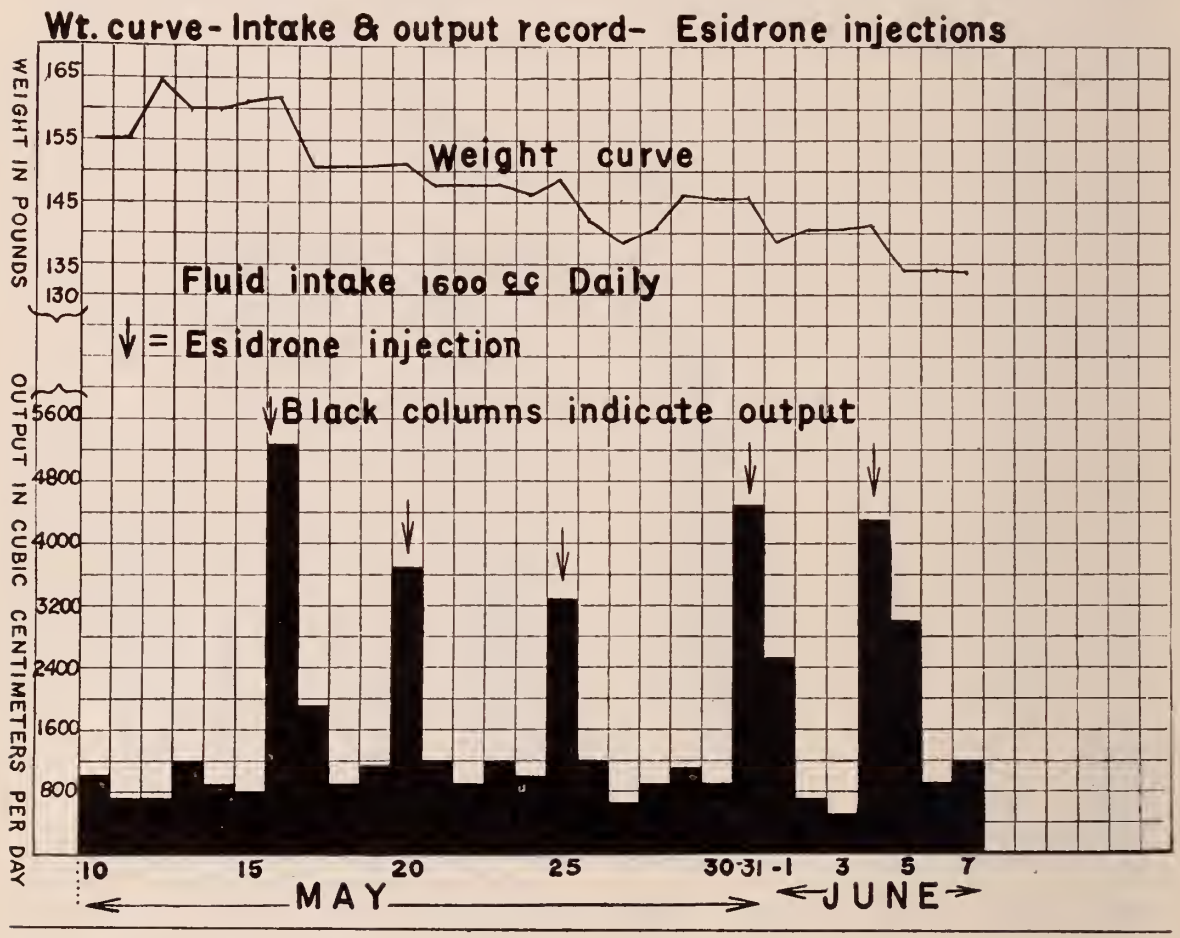
4. W. S., white male age 45 years admitted 2/6/38 with severe congestive heart failure and general anasarca. This was his fifth admission for somewhat similar complaints but of less severe degree. The diagnosis was rheumatic heart disease, mitral stenosis and regurgitation, auricular fibrillation and congestive heart failure, all indicated by the classical signs. The EKG showed auricular fibrillation with right axis deviation. The cardiac regime with digitalis and ammonium chloride was started.

2/9 Esidrone 1 cc. output 2500 cc.
2/11 Esidrone 1 cc. output 1600 cc.
2/15 Esidrone 1 cc. output 3000 cc.
2/19 Esidrone 1 cc. output 3900 cc.
2/23 Esidrone 1 cc. output 3000 cc.
2/28 Esidrone 1 cc. output 2900 cc.
3/5 Esidrone 1 cc. output 2800 cc.
3/9 Esidrone 2 cc. output 5600 cc.
3/14 Esidrone 2 cc. output 5000 cc.
3/18 Esidrone 2 cc. output 4400 cc.
3/22 Esidrone 2 cc. output 3500 cc.

He was discharged 3/25/38 compensated but with the auricular fibrillation with a rate at the heart of 70 per minute. On 5/7/38 he returned again with severe general anasarca more pronounced than the last admission. He did not respond to the cardiac regime including digitalis, so dehydration therapy was started nine days later.

5/16 Esidrone 1 cc. output 5300 cc.
5/20 Esidrone 1 cc. output 3800 cc.
5/25 Esidrone 1 cc. output 3300 cc.
5/31 Esidrone 2 cc. output 4500 cc.
6?4 Esidrone 2 cc. output 4300 cc.

He was discharged 6/20/38 compensated, still fibrillating, weighing 44 pounds less than an admission.



5. T. G., colored male, aged 59 years, was admitted 1/25/38 with substernal pressure, and severe congestive heart failure with general anasarca, This was his third admission to the hospital. There was a definite leutic history with no treatment. Physical and laboratory examination made the diagnosis of luetic aortitis, aortic regurgitation and general anasarca. The cardiac regime included digitalis.

1/27 Esidrone 1 cc. output 6000 cc.
1/30 Esidrone 1 cc. output 4000 cc.

The edema cleared rapidly, congestive failure disappeared and he was referred to the outpatient cardiac clinic on 2/5/38.

Toxic, Untoward and Local Reactions:

Reactions were not encountered in our series. The careful selection of patients probably accounted in some degree for this rarity. A few perivascular injections produced some pain and induration but no sloughing resulted. No cases of uremia as described by Hines[7] followed the use of esidrone as shown by frequent blood chemistry determinations. We have not met the dehydration syndrome described by Pohl and Stern[8] in spite of the profuse diuresis reported in many patients. Vein thrombosis did not occur with esidrone while experiences with other mercurials shows thrombosis noticeably frequent. Diarrhea was a symptom in one patient. After few injections, red blood cells were found in the urine of the individual, but we considered them to be of vesical and not renal origin, due to the great bladder activity and the absence of other evidence of renal disease. This dysuria disappeared in four days and further injections of esidrone produced no red blood cells.

Comment:

The etiologic type of heart disease with congestive heart failure does not influence the effectiveness of esidrone. While maximum diuresis in minimum time is not especially sought because of the attendant danger of the appearance of the dehydration syndrome, the measure of the effectiveness of the diuretic is determined in this way. Our series showed many instances of profound response without the dehydration syndrome. The heart action is unquestionably improved by the increased diuresis. This is accomplished by decreasing the load on the heart and secondly by increasing its ability to carry the load. Subjective improvement and the improvement and relief of symptoms corroborate the benefits to the heart by the removal of fluid. We will publish later, studies on the objective evidence of cardiac improvement by mercurial diuresis.

Summary:

Esidrone is a very effective mercurial diuretic. It is non-toxic in therapeutic dosage under proper indications. The precautions ordinarily observed in the administration of mercurial diuretics should be employed. Local sloughing due to perivascular subcutaneous injection has not resulted.

30 North Michigan Avenue.

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NON-MYXEDEMATOUS HYPOTHYROIDISM. CASE REPORTED WITH PSYCHOSIS

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Discussions of hypothyroidism play a limited role in the medical literature as compared to the hyperfunctions of this endocrine gland. Hypothyroidism is much more common than supposed—existing as a primary and as a secondary condition. Many of the easily fatigued, tired, apathetic, sluggish individuals with a dry skin and coarse hair, complaining of headaches, constipation, nervousness, and vague, non-localizing pains with findings of a low basal metabolic rate are cases of hypofunction of the thyroid. They are frequently overlooked and called neurotics

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by the practitioner or by a more pretentious term by the psychiatrist. Symptomatology may be limited to a few classical symptoms of hypothyroidism with the diagnosis suggested by laboratory findings of a low metabolism.

The terminology or classification of thyroid deficiencies in literature includes mild, severe, early, latent, masked, myxedematous, without myxedema, non-myxedematous hypothyroidism and hypofunctioning thyroid. A workable classification of adult thyroid deficiencies is (a) hypothyroidism, without myxedema; (b) myxedematous hypothyroidism; and (c) non-myxedematous hypothyroidism. Group (a), hypothyroidism, without myxedema, should include the mild or early cases of thyroid deficiency, without evidence of myxedema and a basal metabolic rate of —11% to —29%. Engelbach[1] states that it is questionable whether the slight hypometabolisms, that is, the range between —11% and —20% are of thyroid origin. These slight reductions of rates are more frequently due to hypofunctioning ovaries, pituitary and adrenals. Group (b), the myxedematous hypothyroidism, includes the severe cases of hypothyroidism with evidence of myxedema and a very low basal metabolic rate, usually —30% or lower. Group (c), non-myxedematous hypothyroidism, includes severe cases of thyroid deficiency with basal metabolic rate below —30%, absence of classical signs of myxedema and with less severe non-endocrine reaction. According to Engelbach the basal metabolic rate should be less than —30% before myxedema is considered as an entity. The term "non-myxedematous hypothyroidism" should, also, be restricted to the severe thyroid deficiencies with a basal metabolic rate below —30% inasmuch as myxedema usually does not present itself to any degree before this basal metabolic rate is reached.

The authors wish to report a case of non-myxedematous hypothyroidism in a thin, apathetic male with a basal metabolic rate of —45%, who, under thyroid therapy, gained 67 pounds and improved mentally.

CASE REPORT

Mental History: O. A. R., a single, 23-year-old white male adult, with negative familial history for nervous and mental diseases, was committed to the Elgin State Hospital in June, 1935. He had been in good health until 1932, his second year of college, when he became nervous, worried, restless, agitated, and unable to concentrate on his collegiate work. He was sent to a private sanitarium in June, 1932, and was diagnosed a case of schizophrenia. He improved after four months and was discharged, although he was still somewhat clouded and distractible. He adjusted fairly well at home, and was able to aid his father with his work.

In the fall of 1934 he again lost interest in his work, preferred to remain in bed, developed mannerisms, grimaces, rambling speech, and restlessness, necessitating a second admission to a private sanitarium in December, 1934. He was diagnosed a case of catatonic dementia praecox.

Patient was transferred from the private sanitarium to the Elgin State Hospital in June, 1935, where examination revealed a thin, indifferent, listless, white male who refused to eat and frequently required tube-feeding. He appeared retarded and indecisive, responding slowly to questioning after considerable stimulation and expressed vague paranoid ideas. He was diagnosed a case of dementia praecox.

Physical Findings: Because of the marked emaciation, patient was referred to the hospital service of the institution in October, 1935, for further examination and treatment. He was five feet, eleven inches in height and weighed 104 pounds. Daily temperatures varied between 97 and 98.2 degrees, rarely going above this latter reading. Pulse varied between 56 and 76, although it occasionally dropped to 48 in the early morning. The hair was not coarse, but there was some frontal thinning; thyroid was not palpable; heart negative except for bradycardia and a blood pressure of 84/64; abdomen thin; extremities, reflexes normal, some cyanosis of feet and nails; skin dry with some scaliness. Essential physical findings consisted of emaciation, dry, scaly skin, hypotension, and a bradycardia.

Laboratory Findings: Blood count was normal; hemoglobin 96 per cent., red blood count 4,600,000, white blood count 6,000, and the differential revealed 32 per cent. lymphocytes. Urine, blood Wassermann and Kahn were negative. Blood sugar was 62.5 mg. per 100 c.c., N. P. N. 30.7 mg., and creatinine 1.36. Roentgenogram of the chest was negative for tuberculosis.

Progress: The patient was placed on a high caloric diet with injection of five units of insulin before each meal in order to stimulate his appetite. He gained six pounds, from 104 to 110, in six weeks, and then remained stationary. Mentally, he remained unchanged: he was markedly listless and seclusive; would crawl into bed whenever permitted; or if dressed would sit in a chair with head resting on pillow of an adjacent bed.

On November 5, 1935 a basal metabolic test was taken with the surprising finding of a reading of —45 per cent. A few days later it was —37 per cent. and two weeks later —41 per cent. Glucose tolerance test (see tables) revealed a very high tolerance with a very slight rise after the intake of glucose.

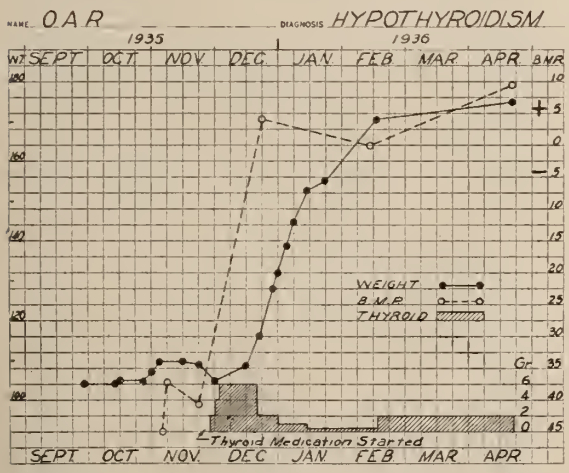
GLUCOSE TOLERANCE TEST

November 6, 1935		January 4, 1936	
Time	Mg. of blood sugar	Time	Mg. of blood sugar
Fasting	80.0	Fasting	86.5
30 min.	93.0	30 min.	106.3
60 min.	93.4	60 min.	72.7
90 min.	80.0	90 min.	101.0
120 min.	84.0	120 min.	80.0
180 min.	90.9	180 min.	61.0

Patient was placed on small doses of desiccated thyroid, starting with two grains a day, gradually increasing up to six grains a day, then decreasing to two grains a day, and finally to one-half a grain a day. After a slight loss, he gained eighteen pounds in weight during the first month and the basal metabolic rate changed to +4 per cent. With this physical improvement, this dull, apathetic individual became an active lad, interested in his surroundings and with partial insight into his mental illness. The second month, he gained an additional twenty-eight pounds, and now weighed 156, as compared to his previous weight of 104. His glucose tolerance test (see tables) at this time showed an improvement, although he still had a moderately high tolerance. In February, 1936, the patient was discharged from the Elgin State Hospital, improved, mentally and physically. His basal metabolic rate was 0 per cent. and he weighed 171 pounds.

Under the observation of his family physician this patient has continued for the past two years on thyroid therapy, the dosage varying between one and three grains daily. In April, 1936, his basal metabolic rate was +9 per cent., in October, 1937, —1 per cent. and in March, 1938, +4 per cent. He has remained at home since his discharge, adjusting well in his community, and working daily with his father.

GRAPHIC CHART OF WEIGHT, BASAL METABOLIC RATE AND THYROID THERAPY



Graphic Chart of Weight, Basal Metabolic Rate and Thyroid Therapy.

This case is reported as one of the severe hypothyroidisms belonging to the grouping of non-myxedematous hypothyroidism. The final test of the diagnosis was the marked physical and mental improvement under thyroid therapy with the return of the basal metabolic rate to normal.

The nature of the psychosis is debatable, whether it was primarily schizophrenia with a thyroid deficiency or primarily due to hypothyroidism with a schizophrenic coloring. The authors consider the patient primarily a schizophrenic, markedly influenced and affected by the severe thyroid deficiency. The marked physical improvement produced an associated mental improvement.

Contrary to accepted text-book teachings of hypothyroidism, overweight and obesity are not necessarily symptoms of thyroid deficiency. Although overweight is a common accompanying symptom, underweight frequently occurs. According to Lawrence[2] thyroid deficiencies may be accompanied by weight abnormalities, obesity being more common in the older subjects, while underweight occurs more frequently in patients with hypothyroidism developing during the period of body growth. Our patient who became ill at the age of twenty would fit into this category. Warfield[3] in his study of 88 cases of hypothyroidism found that 24% had gained weight, 25% were underweight, and 51% had no weight change. In a report of 100 cases of hypothyroidism Fortune[4] found 10% to be definitely underweight. White[5] recently reported 90 cases of hypometabolism with basal range between —11% and —42%, and states that most of the patients' weights were normal, although some were underweight.

SUMMARY AND CONCLUSIONS

1. The suggested groupings of adult thyroid deficiencies are (a) hypothyroidism, without myxedema; (b) myxedematous hypothyroidism; and (c) non-myxedematous hypothyroidism.

2. Non-myxedematous hypothyroidism should be restricted to severe cases of thyroid deficiency with basal metabolic rate of —30% or lower, with the absence of classical signs of myxedema.

3. A case is reported of an emaciated, young male adult with psychosis of a schizophrenic nature, a marked degree of physical and mental fatigability and a basal metabolic rate of —45%. Under thyroid medication the basal metabolic rate returned to normal. The patient gained 67 pounds in three months, improved mentally and was discharged from the institution. Dur-

ing the past two years thyroid therapy has been continued and the basal metabolic rate has remained normal.

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PATHOLOGY OF PNEUMONIA

Review of 150 Cases of Lobar Pneumonia in 3,585 Autopsies

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As early as 1819 Laennec accurately described the gross pathological changes in pneumonia, and the description is classical today. In 1881 Pasteur and Sternberg independently noted diplococci organisms in the sputum of pneumonic patients, and it was not until 1884 that Fraenkel proved the pneumococcus to be the exciting agent. His work was later corroborated by Weichselbaum.

For many years it was the opinion of workers that pneumonia involved the lungs by way of the blood stream, and it was not until 1920 that the pathogenesis of lobar pneumonia was accurately described by Blake and Cecil. These two workers produced the infection by injecting pneumococci into the trachea of monkeys and observed the pathological changes in the lungs. The animals were usually sacrificed on succeeding days and careful studies were made. They observed that mere spraying of the pharynx and larynx with bacteria was without effect. They also noticed that the earliest changes occurred at the hilus of the lung and the process spread to the periphery like a wave. Microscopically the interstitial tissues showed early invasion of the pneumococci before reaching the alveoli. There was also perivascular and peribronchial infiltrations of leukocytes and mononuclear cells. This was soon followed by the stage of engorgement, which is characterized by a marked congestion of the blood vessels and extravasations of red blood cells into the alveolar spaces. This early stage of pneumonia is practically never seen at autopsy, since the process lasts about twenty-four hours. The second stage is that of red hepatization, which lasts up to about the fifth day and is followed by gray hepatization. If the patient survives, complete resolution of the consolidation occurs, with complete re-expansion of the involved parts.

It is remarkable that necrosis seldom follows the pneumonic process. The inflammatory exudate in the alveoli of the lung is disposed of by coughing, by the phagocytic power of the macrophages, and by the ferment action of the leukocytes.

Recently Coryllas and Birnbaum have shown that following the blocking of a bronchus in dogs by plugs of thick, mucoid material, an area of atelectasis results, which is soon the site of a pneumonia. Thus they concluded that the atelectatic portion of a lung is the predisposing factor of the onset of pneumonia.

It must also be emphasized that the occurrence of pneumonia also depends upon the virulence of the infecting pathogenic bacteria and lowered resistance of the affected individual.

The following study constitutes a review of the pathological changes observed in 150 cases of lobar pneumonia. The material was selected from 3,585 consecutive autopsies, performed at the Cook County Hospital from 1936 to 1938 inclusive. The incidence of lobar pneumonia as the primary cause of death was 4.18%, usually considered as the third most frequent primary cause of all deaths.

There were 110 males or 73.3% and 40 females or 26.7%. As to race, 85 were white or 56.7% and 65 were colored, or 43.3%.

The cases were divided into age groups, as follows: ten to 20 years, four or 2.6%; 21 to 30 years, 14 or 9.4%; 31 to 40 years, 26 or 17.4%; 41 to 50 years, 39 or 26%; 51 to 60 years, 35 or 23.3%; 61 to 70 years, 23 or 15.3% and over 71 years there were nine or 6% (see table No. 1.)

From the above, it is apparent that lobar pneumonia in children is very rare while the peak is reached between 41 and 50 years and remains high up to 60 years. The high inci-

Read before the South Shore Branch of the Chicago Medical Society April 27, 1938. From the Department of Pathology, Cook County Hospital.

dence for the latter group may be explained by the fact that the resistance of the individual is frequently lowered due to many associated chronic pathological conditions, as will be shown later.

As to the incidence of consolidation in the various lobes in the 150 cases, the findings here differ somewhat from those usually given in standard text-books. In my series of cases, the right upper lobe was most frequently involved, being affected in 75 cases. The left lower lobe was second, being affected in 72 cases. Third in frequency was the right lower lobe in 63 cases, this usually being given as the most frequent lobe involved. Fourth, was the left upper lobe in 45 cases and the right middle lobe being affected in 39 cases. The entire right lung was involved by the pneumonic process in 21 cases, while the entire left lung was involved in 32 cases. In 70% of the entire series two or more lobes showed consolidation, while 30% showed consolidation in only one lobe (see Fig. 1).



Fig. 1. Incidence of Consolidation in various lobes in 150 cases. Entire right lung involved in 21 cases. Entire left lung involved in 32 cases.

The stage of engorgement or hyperemia, the earliest change to be noted in the lung in lobar pneumonia, was not observed in any of the cases. This stage is usually present only during the first 24 hours of the disease. The changes usually noted were gray hepatization, which usually appeared at the end of the fifth day of illness, and red hepatization when more than one lobe was involved. The stage of resolution, which is the stage of healing, was practically absent except in those cases dying from some complication of the pneumonic process. The involved lung in the stage of resolution is often described as a post pneumonic relaxation evidenced by the loss of elasticity of the lung tissue and complete absence of any inflammatory exudate microscopically.

The complications observed were 1. fibrinous pleuritis in 82 cases or 54.6%; 2. jaundice in 27 cases or 18%; 3. lung abscess in 17 cases or 11.3%; 4. pericarditis in 12 cases or 8%; 5. endocarditis in 8 cases or 5.3%; 6. empyema in 5 cases or 3.3%, and 7. cystitis in 3 or 2% (see table 2).

The pleuritis usually consisted of a fibrinous exudate on the surface of the involved lobe or lobes. Jaundice when present clinically is usually considered as a fatal omen in cases of pneumonia. Empyema is usually a rare complication in adults, being more frequent in children.

It is interesting to note in this series the high incidence of hypertensive heart disease, often present in the patients over 40 years of age. The heart was usually well compensated and showed a moderate to marked degree of hypertrophy in 49 such cases or 32.6%; tuberculosis of the lungs was observed in 17 cases or 11.3%; mitral or aortic stenosis present in 13 cases or 8.6%; nodose goiter present in 21 cases or 14%; hypertrophy of the prostate gland present in 14 cases or 9.3%; chronic cholecystitis and cholelithiasis present in 12 cases or 8%; fibromyomata uteri present in ten cases or 6.6%; cirrhosis of the liver present in four or 2.6% and diabetes mellitus was present in three or 2% (see table 3. The above incidental findings in the 150 cases encountered at autopsy no doubt played a rôle in diminishing the resistance of the individual, thus permitting the pneumonic process to take a fatal course.

Recently it has been shown that clinically too much emphasis has been placed upon the extent of the pneumonic process in the lungs and minimizing the bacteriological studies. It is not so important to know whether one or more lobes of the lung are involved as it is to know the causative organism present. We now know and realize that the advances in the therapy of pneumonia depends to a great extent upon definite bacteriological studies. In 50 of the cases of pneumonia coming to autopsy, bacteriological studies were made. Smears and cultures were made from the involved lung and the predominating organism was determined (see table 4). Sixteen cases showed pneumococci or 32%; these

cases were typed and were as follows; Four were type I; one type II; two type III; one type IV; one type VII; three type VIII; one type XII and two cases could not be typed (see table 5). Streptococci of all types were present in 15 cases or 30%; staphylococci of all kinds in seven or 14% Friedlander's bacillus in five cases or 10%; B. coli in four cases or 8%; influenza in two cases or 4% and m. tetragenous in one case or 2%. The above findings show the high incidence of pneumonia due to other organisms than pneumonococci, thus explaining perhaps the poor results obtained therapeutically in a large number of cases of pneumonia treated indiscriminately with pneumococcic serum.

ANALYSIS OF 150 CASES OF LOBAR PNEUMONIA
AGE GROUP

AGE GROUP						
10-20	21-30	31-40	41-50	51-60	61-70	71-Over
4	14	26	39	35	23	9
2.6%	9.4%	17.4%	26%	23.3%	15.3%	6%

SEX—MALES 110 (73.3%) FEMALES 40 (26.7%).
RACE—WHITE 85 (56.7%) COLORED 65 (43.3%).

Table 1.
THE INCIDENCE OF CONSOLIDATION IN THE VARIOUS LOBES IN 150 CASES BACTERIOLOGICAL INVESTIGATIONS IN 50 CASES OF PNEUMONIA COMING TO AUTOPSY

Predominating Organisms	No.	%
Pneumococci	16	32
Streptococci (of all kinds)	15	30
Staphylococci (of all kinds)	7	14
B. Mucosus Capsulatus (Friedlanders)	5	10
Bact. Coli	4	8
H. Influenzae	2	4
M. Tetragenous	1	2
TOTAL	50	100

Table 2.
INCIDENTAL FINDINGS IN 150 CASES OF LOBAR PNEUMONIA

1.	HYPERTROPHY OF HEART	49 cases	32.6%
2.	NODOSE GOITER	21 cases	14.0%
3.	TUBERCULOSIS	17 cases	11.3%
4.	HYPERTROPHY OF PROSTATE	14 cases	9.3%
5.	MITRAL & AORTIC STENOSIS	13 cases	8.6%
6.	GALL STONES	12 cases	8.0%
7.	FIBROIDS	10 cases	6.6%
8.	AORTITIS (LUETIC)	9 cases	6.0%
9.	CIRRHOSIS OF LIVER	4 cases	2.6%
10.	DIABETES MELLITUS	3 cases	2.0%

Table 3.
TYPING OF 16 CASES OF PNEUMOCOCCIC PNEUMONIA

Type	I	II	III	IV	VII	VIII	XII	XIV	Not Identified
Cases	4	1	2	1	1	3	1	1	2
%	25	6.25	12.5	6.25	6.25	18.75	6.25	6.25	12.5

Table 4.
COMPLICATIONS OF THE PNEUMONIC PROCESS

1.	FIBRINOUS PLEURITIS	82 cases	54.6%
2.	ICTERUS	27 cases	18.0%
3.	LUNG ABSCESS	17 cases	11.3%
4.	PERICARDITIS	12 cases	8.0%
5.	ENDOCARDITIS	8 cases	5.3%
6.	EMPYEMA	5 cases	3.3%
7.	CYSTITIS	3 cases	2.0%

CONCLUSION

An analysis of 150 cases of lobar pneumonia coming to necropsy is described. In 70% of the cases two or more lobes were involved in the pneumonic process. The right upper pulmonary lobe was the most frequently affected (in 75 cases) and the left lower lobe second in 72 cases. Jaundice was noted in 18%, lung abscess in 11.3% and pericarditis in 8%. Essential hypertension and hypertrophy of the heart was present in 49 cases or 32.6% as an incidental finding at autopsy. An exact bacteriological etiology is emphasized in order to institute specific therapeutic measures.

The above review is based upon 3,585 consecutive autopsies. The incidence of pneumonia as the primary cause of death was 4.18%.

Cook County Hospital.

PROGRESS IN MATERNAL WELFARE

HAROLD H. HILL, M. D.
CHICAGO

The educational program being developed jointly by the State Medical Society and the State Department of Public Health aims to further lower the maternal and infant death rate in Illinois. This can only be done by the earnest cooperation of all organizations and individuals concerned. It is generally accepted that from 50 per cent. to 75 per cent. of these deaths are preventable and this would reduce the number of those dying from maternal causes, using the 1937 figures, from 437 to 218, those from infant causes from 4,965 to 2,482. This is surely a most worthy aim.

A series of programs carefully planned by the educational committee of the State Society and the Advisory Committee to the State Health Department have been given in ten sections of the

Presented before Obstetricians and Gynecologists Meeting, 98th Annual Meeting, Illinois State Medical Society, Springfield, May 17, 1938.

State this year on obstetric and pediatric subjects to County Medical Societies. It has been the aim of these series of courses to bring to the doctors a group of interesting speakers on phases of the subjects of particular interest to the general practitioner. We are fortunate to have available to the profession some of the leading men in their respective fields, and they have repeatedly demonstrated their interest in the program by acceptance of invitations to appear before the county units. Some of these speakers were: Doctors Hess, Isaac Abt, Grulee, Parmelee, Danforth, Baer, Falls, Schwarz, Dieckman and Cornell. Some of the general subjects presented have been on the care of the newborn, the premature infant, prevention of contagion, infant feeding, the management of obstetric hemorrhage, toxemias, puerperal infection and prolonged labor. In general the attendance has been good and interest stimulated and maintained.

A large collection of lantern slides illustrating these subjects has been created since the supply and nature of the existing material was deemed inadequate and unsatisfactory. Two exhibits, one for lay audiences and one for the physicians, have been produced this year for the Annual Meeting of this Society. The lay exhibit portrays the essentials of prenatal care, the scientific exhibit concerns puerperal fever. Plans calling for their distribution throughout the State under the guidance of the Maternal Welfare Committees of the County Medical Societies have been made. The one may be shown at county and district meetings of lay organizations, the other before County Medical Societies, their district meetings and in hospitals. Demonstrations can be arranged through my office at 30 North Michigan Avenue, Chicago.

The Maternal Welfare Committee of the State Medical Society is organizing a program which will be offered as a suggestion to the County Societies—plans for studying the needs of their particular community in such a way as to give a better knowledge of their obstetric and pediatric problems, viz.: maternal and infant death rates and their causes, the number dying at home and hospital, what the nature of their medical supervision was, the matter of hospital facilities, etc. We desire to first find out what is killing our mothers and babies, then devise ways and means to prevent as many deaths as is humanly possible.

In three counties of the State—Hancock, Ford, Menard—the County Society has become very active in efforts which should offer some solution of the morbidity and mortality problems in their county. They have worked out details of plans for a special nursing service that offers prenatal care, home delivery service (in one of them), and postnatal follow-up. A similar service has been requested in Greene and Fulton Counties and will be started soon.

The maternal and infant death rates in 1937 in Illinois were the lowest in the State's history, being 3.7 and 43 per 1,000 births respectively. Compared with a decade ago in which the rates were 5.3 and 64.4 we see a saving of the lives of 162 mothers and 2,461 babies, certainly a marked improvement. This is due in no small part to the general interest and thought being contributed to the problem by professional and lay persons alike. Illinois in 1936 had a maternal death rate of 4.5 per 1,000 live births, was exceeded by eight states, namely: Rhode Island, New Jersey, Connecticut, Wisconsin, Minnesota, North Dakota, Utah, and Idaho. The infant death rate was 47 and she was exceeded by only six states, namely: Connecticut, Minnesota, Nebraska, New Jersey, Oregon and Washington.

The accomplishments which have been made in certain controlled programs of certain areas offer a challenge to be met by State Medical Societies, State Departments of Health, and civic and lay organizations. Illinois seems well on the way to a realization of these desired objectives.

30 N. Michigan Avenue.

THE TREATMENT OF ADDISON'S DISEASE

Edward H. Rynearson, Rochester, Minn. (*Journal A. M. A.*, Sept. 3, 1938), discusses the treatment of Addison's disease by presenting hypothetic case histories, which include the patient in a crisis of Addison's disease, the patient with Addison's disease who requires an operation, the patient with chronic Addison's disease and the patient suspected of having Addison's disease. Progress in the treatment of Addison's disease is being reported and it is believed that the best available treatment should consist in (1) the restriction of potassium in the diet, (2) the addition of sodium salts to the diet, (3) the use of an active extract of the adrenal cortex when it is needed, (4) the training of the physician and the patient in the details of treatment of the chronic state of the disease and (5) the early recognition of acute remissions and their energetic treatment.

STUDY OF THE TREATMENT OF EPILEPSY

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JACKSONVILLE, ILL.

The problem of epilepsy viewed from any angle —medical, social or economic—is a widespread and serious one, and yet comparatively speaking epilepsy has been a neglected field. In the United States alone, there are about one and one-half million persons subject to epilepsy. These have only the extremes of care in the home, or in large publicly supported institutions into which the dregs of the patients have settled.

The past history of these epileptics who have finally landed in publicly supported institutions may, in general, be summarized in the following manner: They were at first under the care of the general practitioner, the majority of whom have the general conception and follow the general methods of diagnosis and of treatment which were obtained from twenty to fifty years ago. Receiving no help from this direction the patients then succumb to the intensive high-pressure methods of drug vendors, who now put out scientific looking pamphlets, which claim to present the consensus of medical research. Finally, with the family resources at a very low ebb, and the patient's degree of mental deterioration at such a degree that hospitalization is imperative, the patient is brought to a publicly supported institution.

The sad plight of the epileptic is not terminated at this stage. Having entered the portals of the impressive looking institution and having been classified as an epileptic, he is at once, consciously or unconsciously, cataloged as an incurable and hopeless case and as such is assigned to a chronic ward, segregated with other epileptics and merely given custodial care.

We can thus see that there is both the need and the opportunity to handle the problem of epilepsy in a manner somewhat different from the conventional method. If, for the time being, we put aside Dr. William G. Lennox's idea of erecting epileptic colonies for these unfortunates, and put our shoulders to the wheel, there is much that we can accomplish with the conditions as they are—although they are far from ideal.

"The outlook for a patient suffering from epilepsy is not so hopeless as the laity and some physicians regard it . . . by proper and sustained treatment we can restore health after a number of years, so that the patient may continue free of attacks without medication. In another group the patient may be made convulsion-free and so maintain a normal social existence by the continued use of medication—a small price to pay for health. In some, the attacks may be diminished or so modified that only very light, momentary lapses of consciousness occur instead of convulsions, and the patient may indulge in normal activities without fear of injury or overt recognition of his affliction."

Now we are ready to tackle the problem as it stands. We will find in each institution a group of epileptics, with or without psychosis and with a greater or lesser degree of deterioration. Most of them have received luminal but few have benefited by its haphazard administration. What then are we to do?

We of the Jacksonville State Hospital have tried to solve this problem. As yet, it is too early to state whether or not we are on the right track, but though we may have made a false start we are presenting this paper not as a final report, but rather as a work sheet so that we can get the opinion of the staff members of the other institutions and also learn what they are doing in this particular line, so that we may benefit by their experiences.

In the first place, we have, on the basis of mentality, placed the epileptics into three groups. In the first group we include patients who are normal or nearly normal mentally. They have an I. Q. of nearly 80 or above and an outlook which, if the seizures can be controlled, justifies the hope of a productive place in society. In the second group we have placed the patients who are definitely deteriorated and short of some miracle can never again be useful members of society. Yet even these patients have once been normal and even now are able to feed themselves and enjoy small pleasures and do small tasks. In the third group we have the congenital idiots and imbeciles who by no imaginative possibility can ever be anything better.

We now face the problem of the treatment of these epileptics. Since our study was confined to the so-called cases of idiopathic epilepsy, and since rational therapy is not possible until the pathogenesis of idiopathic epilepsy is fully elucidated, we had to resort to symptomatic treatment. Dealing, as we are, with institutional cases, our problem was very different from that which faces the physician on the outside. Our

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object was to decrease or entirely suppress the number of attacks. Such therapy has no curative element other than that patients who can be kept free from attacks for a sufficiently long period of time tend to lose the habit. The control of attacks also allows the patients to lead a more or less active life within the institution and prevents possible damage to the brain in the form of post-convulsive lesions.

The medical treatment of epilepsy consists partly in the administration of drugs designed to arrest attacks or to render them less frequent and less severe. Many drugs have been of service in the past: chloral, borax, potassium or sodium borotartrate and digitalis. These are of some value in particular types of cases. The two outstanding anti-convulsants at the present time are bromide and phenobarbital. As to whether one is superior to the other is difficult to state. The consensus of medical opinion is that luminal is superior to bromide in moderate epileptic involvement where the patient is trying to work and therefore desires to avoid as much psychic dullness as possible. It is presumably free of the undesirable effect of the bromides, but frequently causes a "dopey" feeling. Phenobarbital is effective chiefly in the grand mal seizures, but is not so good for minor attacks. It carries one grave danger, sudden cessation of intake may precipitate a status epilepticus.

Bromide is probably the most effective anti-convulsant. It has been used successfully since 1853. The objection to the continued use of bromide is that the patient becomes stuporous and mentally sluggish. When the drug is pushed to the point of stopping attacks, the mentality, oftentimes has also been slowed to the point at which the cure is worse than the disease. These disadvantages have probably been overemphasized. The possibility of permanent damage due to histological changes through prolonged use of the bromides is rare, if it exists at all. Studies on non-institutional cases show that the idea of "bromide brutalization" and "bromide deterioration" are not justified. These ideas are due chiefly to the failure to distinguish between deterioration and intoxication, to the use of bromide in patients destined to deteriorate anyways, and to the chance behavior disturbances in patients who had received bromides and in whom such disturbances had occurred without bromides.

The advantages of bromide therapy are: that in the majority of cases its influence is incomparably greater than any other remedy; that its influence is less transient than that of any other drug, and that it is excreted slowly. The slow excretion is a safety factor, because the blood bromide level remains constant even if the patient happens to skip a few doses. The level is easily controlled by the easily obtainable reading and the oral dosage adjusted.

In using bromides every patient must be experimented with to determine the best dose, and when large doses are given periodic check ups of the blood content should be made to avoid bromide intoxication. The bromides displace the chlorides in the blood, but the anti-convulsant action is a pure bromide-ion action. Optimum anti-convulsant effects are obtained when the blood bromide level is between 225 to 275 mg./100 cc. of blood. One must not carry the process too far. Evidence of overdosage of bromides, so-called "bromism" is seen as an ataxia of gait and arm movement, thick-coated tongue with slurring speech, mental obtusion approaching stupor, sleepiness and not infrequently psychotic periods. This is easily remedied by stopping the bromides and substituting chlorides until the abnormally high bromide level drops.

Taking into consideration all of these factors, and being personally of the opinion that under existing conditions the bromides would probably prove the more effective of these two anti-convulsants, we decided to put most of our cases on bromide therapy. These patients have now been under observation for three months. Because of the shortness of the period of observation, we are merely presenting a preliminary report and are not drawing any definite conclusions.

For convenience's sake, this experiment was limited to the female epileptics on one ward. The past histories of all of these patients are very similar. They have all run the gamut of private practitioners and the various patent medicines and have finally landed here.

These patients were divided into four groups and each group was treated differently. Group one consisted of five patients who have had convulsive seizures for from fifteen to twenty-eight years, and who have been in institutions for from one to fifteen years. They were placed on a triple bromide mixture. In December they received twenty grains of bromides three times daily in this liquid mixture. During January and February the dose was reduced to forty-five

grains daily. The effect of this medication is shown in the table below.

TABLE 1

	November	December	January	February
Convulsions for Month..	17.000	11.000	7.000	15.000
Convulsions per Day....	0.566	0.355	0.223	0.535
Convulsions/Day/Pt. ...	0.195	0.071	0.045	0.107

The marked rise of the number of convulsions in February was due to an increase in convulsions in two of the patients. The remaining cases continued to show a decrease in the number of convulsions. The increase in convulsions varied inversely with the blood bromide concentration as illustrated in table two.

TABLE 2

	January		February	
Case:	Blood Bromide Concentration	Number of Convulsions	Blood Bromide Concentration	Number of Convulsions
N.W.	200 mg/100cc	0	140 mg/100cc	5
G.C.	300 mg/100cc	1	150 mg/100cc	7

These two cases well illustrated the existence of the wide individual differences between epileptics as to the optimal bromide saturation. In some patients seizures are controlled by as low a level as 100 mg./100 cc. of blood; in others, one has to go to 200 or 300 mg./100 cc. Good results can be obtained only by a chemical study and control of the patient's blood bromide. It is wise to keep the patients slightly above the lowest level at which convulsions have disappeared. This slightly increased level will guard against the effect of any sudden intake of salt.

Group two, consisting of six patients who have had convulsive seizures for from ten to fifty years, and who have been in institutions for from one to ten years, were placed on triple bromide tablets. They received one 7½-grain tablet three times daily for a total of 22½ grains of bromides daily. This medication was continued through December and January. The effect of this medication on the number of convulsions is shown in table three.

TABLE 3

	November	December	January
Convulsions for Month.....	26.000	59.000	68.000
Convulsions per Day.....	0.866	1,903	2.193
Convulsions/Pt./Day	0.144	0.317	0.365

The marked rise in the number of convulsions may be due to several factors. Firstly, it may merely be another illustration of the oft noted fact that the bromides seem to lose their effect after an unsuccessful administration of luminal; secondly, these few months may be considered as a transitory period following an unsuccessful administration of luminal and during which time small doses of bromides were given and the blood bromide concentration had only reached the lower and ineffective levels; thirdly, this group may have had several "recalcitrant" patients.

Taking all of these factors into consideration we subdivided this group into two smaller groups. Sub group A, consisting of three patients who had shown only a moderate increase in the number of convulsions; and sub group B, consisting of three patients who had shown a marked increase in the number of convulsions. The former were put on a triple bromide mixture and received four-fifth grains of bromides in this liquid mixture, while the latter were placed on luminal, receiving half-grain tablet three times daily. Both sub-groups benefited by this changed in medication.

The results are tabulated below.

Table 4.

	January		February	
	A.	B.	A.	B.
Convulsions for Month....	15.000	53.000	6.000	21.000
Convulsions per Day.....	0.866		1.903	2.193
Convulsions/Pt./Day	0.163	0.569	0.071	0.273

Group three consisted of three patients who have had convulsive seizures for from thirty-seven to forty-one years and who have been in institutions for from six months to twenty-four years. They were given fifteen grains of sodium bromide and one grain of luminal in a capsule, receiving three such capsules daily. This medication has been continued to the present time. One of the patients in this group was transferred to another ward and has been dropped from consideration in the tabulations of the January and February results. The results of this group are tabulated in table five.

Table 5.

	November	December	January	February
Convulsions for Month..	16.000	16.000	8.000	10.000
Convulsions per Day....	0.533	0.533	0.258	0.342
Convulsions/Pt./Day:...	0.177	0.177	0.129	0.171

Group four was kept on luminal. The number and the character of the convulsions have shown no essential changes and hence on tabulated results will be presented at this time.

Several of the patients have received individual treatment because of the special character of their cases, but these cases will be discussed in another paper.

Comment. The problem of epilepsy is a very serious one and merits much more consideration and serious attention than it has been getting in the past. It has not yielded to individual efforts,

but a cooperative attack should give a larger hope of ultimate success.

It is logical to assume that the place to study epilepsy is among the large number of patients housed in public institutions. These institutions have members on the staff who could put to large scale clinical tests newly developed ideas and make observations of therapeutic procedures and drugs. The results of themselves would be of value, but even more important, the morale of the patients and the staff would be raised. It was with this view in mind that this problem was undertaken and that this paper is presented. Because of the small number of cases and the brief period of observation, no definite conclusions can be drawn, but it is hoped that this paper will stimulate some interest in this age-old problem and encourage further work and an exchange of ideas between staff members of the different institutions.

The majority of epileptics in state institutions, regardless of the number and character of their convulsions, the duration of their symptoms and the absence or presence of psychosis or deterioration can be benefited by proper medical procedures. While it is true that the use of anticonvulsants has no curative element, yet we must not lose sight of the fact that the control of attacks will allow the patients to lead a more or less active life within, and sometimes even without the institution and prevent possible damage to the brain in the form of post-convulsive lesions.

CONCLUSIONS

1. All cases receiving large doses of bromides and whose blood bromide concentration had risen to the point approximating the optimal concentration level showed a definite decrease in the number of convulsions.

2. Those cases which had undergone an unsuccesful administration of luminal and were then placed on small doses of bromides showed an increase in the number of convulsions, but when the bromide dosage was increased and the blood bromide concentration level rose we noted a decrease in the number of convulsions.

3. Although a blood bromide concentration of 300 mg./100 cc. of blood was reached in several cases, no cases of bromide intoxication were noted during this period of treatment.

DISCUSSION

Dr. Isidore Finkelman, Chicago: The program committee of this section is to be congratulated on choosing Dr. Novick's paper for presentation today. The epilepsy problem has been neglected in state institutions and offers to institutional physicians a fruitful field of research.

Every now and then a report is made of the successful treatment of epilepsy by some new method. For example, snake venom, rabies or brain lipids have been reported as successful agents. However, these and other new methods have proved disappointing and we must continue to treat epileptic patients by older, well-recognized methods. Of these, the administration of bromide or of phenobarbital are the best. As Dr. Novick said, the anti-convulsant action of the bromides is a bromide ion action. The bromides are in general superior to luminal, although there are individual cases in which luminal or a combination of luminal and bromides are more effective. In the Northwestern University Clinic we have 90 active patients treated by sodium bromide or luminal. In 24 (or 26.6%) the attacks were stopped soon after treatment was instituted and they have not recurred; in 20 additional cases attacks were stopped, recurred and then later ceased, making 44 (or 48%). That is to say, in about one-half of the epileptic patients treated in a clinic the attacks can be stopped. This percentage is even larger in private practice.

In our experience, the results with luminal are not so favorable as with bromides. Attacks were stopped in 35% of cases treated with luminal as compared with 48% treated with bromides. However, some of these cases had previously been ineffectively treated with bromides. A large percentage of cases of epilepsy can be controlled by bromides or luminal in cooperative patients.

Jacksonville State Hospital.

NEGLECTED, FORGOTTEN BUT SOME EXTREMELY VALUABLE REMEDIES

Used by the Laity for the Treatment and Supposed Cure of Pulmonary Tuberculosis During the Seventeenth, Eighteenth and Nineteenth Centuries

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From history we learn that the ancients well recognized the disease tuberculosis, which was then recognized as phthisis. Hippocrates (464-376 B. C.), the most eminent physician of antiquity, and regarded as the "Father of Medicine," gave us a good description of this disease as he observed it; and more than fifteen hundred years elapsed after his time before his depiction of

*Deceased.

the clinical nature of phthisis was again reached. He spoke of fever, hemorrhage, cough, pleurisy, pain in the chest, clubbing of the fingers, etc. We are also indebted to Hippocrates' day for the first name of this disease—"Phthisis," which is derived from a Greek word meaning "to pass or waste away." Other names for this disease were added from time to time, and later, as our vocabulary gradually increased, new words came into use for this malady, such as "Consumption" (a gradual decaying or destruction of the body), the scourge, the plague, the pestilence, the wasting disease, the passing disease, etc. The word "Tuberculosis" is of more recent origin and is composed of two words—"tubercle" (a small nodule) and "Ossis" (a morbid condition). Other ancient writers, Aristotle (384-322 B. C.), Celsus (30 B. C.-50 A. D.), Galen (131-201 A. D.), all recognized this disease, but no special method was devised nor advocated for the cure of the consumptive. From Galen's time until the sixteenth century with the possible exception of Avicenna (980-1037 A. D.), an Arabian physician, no mention in their writings is made of consumption as a disease entity. In that century the first attempt was made at an anatomical and physiological orientation; however, no attempt at a treatment was made until the common people by customs and beliefs—the folklore—advocated, from family to family, from mouth to mouth, the use of home remedies.

With the discovery of this continent and the recognition of so many various roots, plants, herbs etc., as potential medicaments and their introduction into the European markets, the interest in the care of the consumptive became more in evidence, while the home treatment soon developed into a commonplace practice. The attention shown the consumptive at that time consisted of the giving of infusions and decoctions made from those newly discovered roots and herbs, the giving of animal derivatives, animal fats and animal blood; and even animal dung, or excreta, was vaunted as a sure cure for consumption. Castoreum, the two glands found in the inguinal region of the beaver, is a drug that has been much in use since the time of Hippocrates until approximately one hundred years ago, but it is now entirely discarded by the Standard Pharmacopoeias—is no longer official. In the lower abdominal area, or in the lower pelvic region of the beaver near the inguinal glands, large quantities of fat are always found. This fat was vaunted as a cure for consumption and was much in demand at one time; but since the discovery that castoreum is of no special medicinal value, and since its discontinuance as a therapeutical compound and as a recognized pharmaceutical preparation, beaver fat has also been discarded as a salutary aid in this malady.

During a certain period in history the beaver was considered the most valuable of all animals when every part of its body was highly recommended at some time or another for the treatment of the various human ailments. Even as early as the year 1540 various parts of the beaver's body were very much prized for their great curative properties. In the early days of Hippocrates the use of castoreum was lauded for mental disturbances in women, for epilepsy, for hysteria. In the last few centuries the inguinal glands (castoreum), when thoroughly dried, comminuted, and ground up, were macerated in alcohol and so a tincture was prepared. This solution was then given to women in uterine disturbances, in spasms, in epilepsy, in hysteria, in menstrual disturbances, in nervous complaints as an antispasmodic, etc. The beaver fat was given to the consumptive as the most dependable remedy for the cure of the disease. The teeth of the beaver were strung like beads, then placed around the neck of the teething infant and worn an an emulet, or talisman, to relieve the slow teething process. The beaver's hair was used to stop local hemorrhages when applied directly upon a wound. The flat tail of the animal was roasted to a turn and served as a delicious morsel, satisfying the most fastidious epicure; and the fur was fashioned into stylish capes and garments. About 1607 the Hudson Bay Company exploited the Northwestern Territories and again brought the beaver prominently, but only temporarily into the field of medicine and economics. Before the discovery of this country the beaver, as a profitable animal, was brought from the northern part of Europe, from Russia and other northern countries.

The remedies used for the treatment and supposed cure of the consumptive may be grouped into four classes:

CLASS A

Preparations of animal derivatives or of ani-

mal origin. For the treatment of tuberculosis all kinds of fats and oils, mainly of animal origin have been much in use. The common people, particularly the country folks, were inclined to demand these various fats and oils from the apothecaries and often these demands exceeded the supply. In order to accommodate these requests the apothecaries prepared a mixture of ordinary hog's fat, or lard, two or three parts, and one part of cottonseed or sesame oil. This mixture is very similar in color and consistancy to the ordinary fats. When a demand was made for a certain animal fat, this particular fat asked for and the various other special fats requested from time to time were usually supplied from one and the same ointment jar. Incidentally, it may be remarked here that out of this common ointment jar in the apothecary shop many other fats and oils were dispensed as, for instance, snake oil. During the summer and fall seasons when the circus visited the various villages and towns and the children saw the many acrobatic stunts performed, snake oil was then much in demand for rubbing along the unyielding spine or over the inflexible muscles of the back; and, logically, the apothecary shops were considered the proper places to go for genuine snake oil.

1. *Fats and Oils.* Of the many fats that were offered in the treatment of the consumptive, the following may be mentioned:

(a) Axungia Caninus; Adeps Caninus. (Dog Fat). Of the various animal fats, dog fat has for many years been considered of especial value for the cure of the tuberculosis individuals. In the northern part of our country, which was settled by people from middle and northern Europe, if a member of the family was consumptive, a good-sized dog was obtained and after being gelded was securely fastened so that he could not run about freely. Being so closely confined, within a short time he became quite fat, when he was slaughtered like a hog. The so procured fat was carefully stored away and the consumptive member of the family would be given about a tablespoonful of this fat three times a day. When the supply of fat began to run low, another dog was secured and treated in a similar manner, so that there would be no shortage and the patient would always have the necessary medication. However, it was known that should the supply give out at any time, dog fat could always be secured at a nearby apothecary shop.

(b) Axungia Castori; Adeps Castoris. (Beaver Fat). The fat of the beaver as aforementioned, was extensively used in the seventeenth and eighteen centuries. In pharmaceutical parlance, it was known simply as "Adeps Castoris." As stated before, after the removal of the inguinal glands from the beaver, large quantities of this fat are found in the pelvic region but with the disuse of castoreum as a medicament more than a hundred years ago, beaver fat also lost support as a curative agent.

(c) Axungia Ursina; Adeps Ursinus. (Bear's Grease or Fat) and Axungia Anserini; Adeps Anserinus. (Goose Fat.). During the last two centuries these two fats were much in use for the treatment and cure of the consumptive; and also in the case of these supposed remedies when the supply was found to be short, the ointment jar in the apothecary shop would supply the demand.

(d) Oleum Jecoris Aselli; Oleum Morrhuae. (Cod Liver Oil). This oil is prepared from the liver of the cod fish. The better quality of this oil is usually obtained from the Lofoten Islands near the northwest coast of Norway, and other islands near Bergen, Norway. The oil obtained from the liver of the cod frequenting our northern seas is also of good quality, but it has not gained so valuable a reputation as the Norwegian oil. All the good oils are usually of a light yellow color; but darker oils of very good quality are also offered and for the treatment of the consumptive it was in active demand for many hundreds of years. In the large cities throughout the country the apothecaries of Norwegian descent have had the first opportunity to sell this product. It is shipped to this country in 50-gallon tin containers, and on its arrival in the fall it is at once put into pint bottles of glass and an attractive display made of them in drug store windows. The public considered that the administration of this oil to the sick had a most beneficial influence in nourishing and strengthening the diseased individual, hence its favorable effect when given to the consumptive.

For many years it was deemed more advantageous, more helpful to the consumptive if a small amount of iodine was incorporated with

cod liver oil, so .01% of iodine was added to make it especially efficacious. About one hundred years ago cod liver oil was considered the most valuable of all the various animal fats and oils for the treatment and cure of consumption; however, at the present time its use is very limited for that purpose.

2. *Other Animal Products Used*: (a) Lac Vaccinum; Milk. (Cow's Milk.) For many hundreds of years milk was regarded as one of the best health measures, the most complete food and being highly recommended for the cure of the consumptive, the patients acquired the habit of drinking it in large quantities. Physicians have always prescribed and encouraged the phthisical to dring a litre or two of milk daily. With the opening of hospitals, known as "Sanatoria" for the care of consumptives, a considerable number of these institutions came into existence for this class of patients in which the daily nutriment consisted of an exclusive milk diet—nothing but milk. Quite a few of such institutions were also established in the United States during the last century, one of which I visited at that time. It was a good-sized sanatorium, in a fairly large city in southern Minnesota and this exclusive milk diet for the consumptive was then in vogue in that institution. The treatment of the patients began about seven o'clock in the morning and continued until seven or eight o'clock in the evening. The milk was administered to each patient and given warm, lukewarm, cold or ice cold to suit the individual case. Every half hour a nurse would bring in a fresh supply consisting of eight ounces or one-half pint of milk to be consumed within the following half hour. Many patients would drink from one and one-half to two gallons of milk during a day, and I have been informed that some would drink even three gallons daily. On a consumptive's arrival at the sanatorium he was put to bed and his temperature taken three times daily. If his temperature was found to be above normal, he was not allowed to leave his bed. This exclusive milk diet was continued for many, many months, with much rest and no exercise. Most consumptives showed a marked improvement and gain in weight in due time. Every evening a mild saline cathartic was administered to the patients, and early each morning a colon flushing was given with luke-warm water containing a teaspoonful of glycerine and a little epsom salts. These sanatoria, in which the exclusive milk diet was the prevailing rule for the consumptive have long since abandoned this curative process. I can recall one such institution in Canada and a few throughout the United States, but all of them have now changed their method of treatment for the consumptive.

(b) Lac Capra. (Goat's Milk.) The goat is often referred to as the "cow of the poor." The milk is easily digested, very nutritious and is most useful for the care of the consumptive. The yield of milk is not very great, the daily average being about two quarts. During the past and present centuries goat farms have been much in evidence; and although goat's milk has no special superiority over cow's milk, the consumptive is so obsessed with the belief that goat's milk is more beneficial in his case, that he demands goat's milk. The charity consumptive will always insist on having goat's milk for himself, reasoning, that if goat's milk commands a higher price it must be better. The truth is that cow's milk, of fairly good quality, may be given freely for tuberculosis, as well as for any wasting disease; however, as goats are infrequently tuberculous, the milk of the goat is always free from the tubercle bacillus, so that the patient has less chance, if any, of becoming reinfected from that source.

(c) Lac Fermentatum; Kumiss or Koumiss. (Fermented Milk.) As a beverage for the consumptive, fermented milk dates back into ancient history. The Tartars on the steppes of their ancient holdings in Asia, at Kalmauk, and at other abodes, used fermented mare's milk very extensively. This milk was known everywhere as "Koumiss." Throughout the civilized world a similar beverage is made from cow's milk, which was quite prevalently used in the last century. Ordinary pure cow's milk, mixed with an equal quantity of skimmed milk, to which is added sugar and a definite amount of yeast, is set aside for 36 to 48 hours, when the cheesy matter will have subsided; then the clear whey is poured off, strained and put into clean empty quart champagne bottles, which are securely corked and wired, placed in a cool place and in about three or four days the "Koumiss" is ready to drink. Koumiss must then be con-

sumed within ten or twelve days, as, after that time, it undergoes an acid fermentation, becoming merely a vinegar mixture and is unfit to drink. During the last century in many of the large cities of our country the purchase of Koumiss at a bar was common but it gradually lost favor, due no doubt, to the rapid change it undergoes in a few weeks. It is questionable if a consumptive is benefited by drinking Koumiss; however, its pleasing taste and slight stimulating effect were much sought after by the unfortunate patient. Although Koumiss was much vaunted as a good remedy for the treatment and cure of the consumptive, its dear price did not make it very popular. It was highly recommended for its tonic and stimulating effect, which was due to its small alcoholic content and was very much relished by the consumptive—and by the non-consumptive as well.

(d) Lac Asininum (Asses' Milk) and Lac Ebutyratum (Butter-free Milk, Debuttered Milk or simply Buttermilk.) These two milk products may be mentioned here as medicine for the consumptive patient.

(e) Sanguis Bovinus. (Beef Blood.) The fresh blood of the ox, bull, cattle, etc. The blood was secured at the abattoir or slaughter-houses and in order to avoid its early coagulation, a little citrate of sodium was added to the fresh blood taken from the cattle. In the last century the consumptives went to the abattoirs every morning in groups of twenty to forty patients, each one carrying his own drinking utensil and secured a prescribed amount for consumption at that time; all returning every afternoon for a second allowance. Among consumptives the belief always prevailed that their sickness was caused by impure blood in their bodies and that by taking pure blood into the body by swallowing, it would replace the impure blood in their veins and cure the disease. Until some fifty or one hundred years ago the drinking of blood at the abattoirs was thought medicinally proper but since that time it has not been considered good therapy.

(f) Sanguis Taurinus or Bovinus Inspissatus. (Dried, Exsiccated Beef Blood.) By the time the demand for the ingestion of fresh blood had increased among the consumptives sufficiently to warrant, pharmaceutical firms conceived the idea of evaporating the liquid out of the blood and then they offered this dried blood for sale in powdered form. This exsiccated or dried blood did not sell very readily as the drug was so expensive it was found that most consumptives could not afford to pay the price asked and the gradually decreasing sales proved its unpopularity.

(g) Pepton; Pepton Carneum. (Beef Pepton.) Owing to the easy assimilability and ready digestibility of beef pepton, it is highly prized by the medical profession and for many years was recommended for the treatment of consumption. However, it has now lost favor as a remedy for the cure of this disease, but for its general treatment it is still supported as a nutrient.

(h) Helices and Limaces. (Snails—Garden Snails, House Snails, Path Snails.) Gasteropoda of the family of Pulmobranchia; Helices Vivenetes, (Living Snails.) The mating of the snails is in the spring and by fall their half-moon-shaped opening is closed with a layer of calcium or lime, at which time they hibernate, when they are gathered and stored away, to be used later for medicinal purposes. For many hundreds of years a snail beverage was extolled as a sure cure for consumption. A tablespoonful of snails was ground in a mortar or a coffee mill, from which an infusion or decoction was made and sweetened with sugar to suit the taste and a cupful of this hot liquid was administered to the consumptive about three times a day. Along with many other of these singular concoctions for the treatment of tuberculosis, this snail cure has passed into the limbo of oblivion.

(i) Sheep Nanny. The excreta of the sheep or the goat was dried and ground, then given to children in the form of an infusion, which was much in use by the common people for the treatment of measles. However it was soon asserted by the consumptive that if this sheep nanny decoction contained such curative properties for measles as claimed, it must surely be good for consumption, so a sweetened extract of this sheep nanny excreta was served to the consumptive several times daily. Like all proclaimed remedies for the cure of consumption, its use eventually fell into disuse.

CLASS B.

Herbs for the cure of consumption were in use by the common people for many centuries.

These herbs were generally home grown, cut when their season was over, and stored in the attic, hung along the rafters. When they were needed for the consumptive patient, the necessary supply was taken down and prepared as tea. Such herbs or roots that could not be grown in one's own garden at home or those that had to be imported from foreign countries, were usually purchased at an apothecary shop. The roots, herbs and other plants from which drugs were prepared that were recommended for the cure of consumption are listed as follows:

Roots, Herbs, Barks, Woods, Seeds etc.—

1. Anachuite Wood. This wood was brought from Tampico and introduced into the markets of Europe and in 1859 into the United States. The natives of Tampico used it in the treatment of coughs and colds, particularly for colds in the chest; hence in both Europe and America it was highly recommended as a specific for consumption. In a pharmaceutical paper in 1860 a European writer and editor tersely remarked: "How many different forms of disease are embraced in the word 'consumption'? This word should be as a panacea, a universal application in all the different forms of lung diseases." In those early years every medicament applied to any other disease was sure to find, sooner or later a field in the consumption cure; however, this remedy never found much support and came early into disuse.

2. Gynocardia Odorata; Chaulmugra Odorata; Hydnocarpus Odoratus. The seed of a fruit grown from time immemorial in India. The oil (Chaulmugra Oil) expressed from this seed was used as a tonic and is supposed to possess blood-lessening properties. In India it has been used in hemorrhagic tuberculosis and in leprosy; and there it is considered as a vegetable mercurial, simulating its effects as does mercury in syphilis. There is no doubt but what chaulmugra oil possesses healing properties for treating both leprosy and tuberculosis, which is evidenced by the salutary effect of this drug in both diseases when given internally; and it is also very efficacious as a remedy when used externally, by local applications.

3. Hieracium; Lungweed. At one time this was judged a most dependable medicine for the treatment of consumption and for months at a time many a consumptive drank an infusion or decoction of this weed, hoping to arrest the disease. Because of its name, "Lungweed" was considered a specific—a remedy peculiarly and particularly adapted to cure "Lung" disease.

4. Pulmonaria; Lungwort; Lungweed; Lung Moss. This herb was very little used at first but down through the centuries it became more popular among the common people and even at the present time it is still in use as a remedy for the cure of consumption and in pulmonary hemorrhage in the form of a decoction or a tea, sweetened to suit the taste. And here again the name lends faith to the cure.

5. Hypericum Perforatum; John's Weed; Devil's Weed; Witches' Weed. This herb is no longer in use as a medicinal alleviative but in times past it was considered an astringent, an aromatic and a specific for the treatment of consumption.

6. Phellandrium Aquaticum; Water Fennel; Horse Fennel. At one time this was highly recommended for the treatment of consumption, by administering an infusion or decoction, sweetened to suit the taste, to the consumptive patient. For many centuries past this drink was liberally partaken of as a curative drug for tuberculosis, while today it is but another medical experiment chronicled in the history of this disease.

7. Galeopsis. About one hundred and fifty years ago this herb, known as "Consumption herb," also as "health tea," was popular as a prospective drug to aid in the cure of consumption. The sale of this herb was stimulated by the suggestive names of "consumption herb" and "health tea," but its use has now been entirely abandoned.

8. Plantago Major, another herb, which was much in favor years ago. A cup of this sweetened infusion was supplied for the consumptive to drink three or four times daily but this herb has now been long forgotten for such purposes.

9. Scolopendrium Officinarium; Deertongue. This weed was highly regarded as an effective home remedy among the common people, particularly in Europe where it was served as a sweetened decoction to treat all kinds of pulmonary diseases, especially the coughs of phthisical subjects.

10. Lichen Islandicum; Iceland Moss. An infusion or decoction which was largely em-

ployed among the common people as a remedy for the treatment of the young consumptive.

11. Drosera Rotundifolia; Sunweed; Maiden Blushes. For a time this herb was very little utilized for remedial purposes but in the last one hundred years it has regained its reputation as a typical remedy for the cure of consumption. It is also used for whooping cough and for all diseases of the air passages but is of no special medicinal value.

12. Tormentilla Potentilla; Radix Tormentilla; Tormentil Root; also Blood-root. Either in powdered form or as an infusion. The ordinary run of folks considered this root as a specific in the treatment of the consumptive; and it was also given in asthma and in all disturbances of the respiratory organs. It possesses no medicinal worth but the red color was thought to represent blood, hence it must be of value in tuberculosis.

13. Sanguinaria Canadensis; Blood-root. There is no disease known in medicine in which blood-root at some time or another has not been recommended for its supposed healing qualities. It was especially lauded for the beginning cases of consumption, the so-called incipient cases—if the cases could be so diagnosed. This root contains no medicinal value; however, it was believed that owing to its making a red infusion when put into hot water, it represented blood and as the consumptive regarded consumption as a blood disease, he imagined that this colored decoction must have a special salutary influence on his blood. Blood-root is now entirely in disfavor as a medicant.

14. Guaiacum; Resin of Guaiac. Some centuries ago this drug was much in evidence as a proposed specific in the treatment of the consumptive. A tincture was prepared by dissolving the resinous portion of guaiac in an alcoholic vehicle. It was fully described and included among the pharmaceutical preparations of that day. Guaiac was introduced into the apothecary shops as a remedy of great value for the cure of consumption but when guaiacol carbonate was advanced in the last century as an effectual compound for treating phthisis, the use of resin of guaiac was discontinued; and today both guaiacol carbonate and resin of guaiac are rejected as health restoratives for this disease. From the similarity of names, both of these drugs were considered specific cures in phthisis.

15. Ammoniacum; Gummi Ammoniacum. This drug also came into use for the cure of consumption; however, it was very short-lived for this purpose and is now only a memory.

16. Lactucarium: Lactuca. This curative preparation was made from the milky juice which exudes from the plant Lactuca Virosa, which fluid is somewhat toxic and simulates opium in its soporific effect. This drug was sought after during the past century as a remedy for cough in the phthisically afflicted persons but it is no longer upheld as giving such medicinal aid.

17. Macropiper; Kawa-Kawa. The roots of a plant found in the South Sea Islands, the fermented juice of which possesses intoxicating properties. This plant is indigenous to the Hawaiian Islands and in Honolulu a potion was prepared from this root, the manner of which is both disgusting and revolting. It simulates the practice of snuff-dipping as observed in some of our cities. The root was put into one's mouth and chewed, during which mastication the juice was extracted from the root by means of the saliva, which mixture was then spit into a container that had been placed in the center of a room. The chewers crunched the root until it was thoroughly exhausted, then spit every mouthful directly into this communion bowl, around which they sat in a circle. This assorted accumulation of sputa and extracted juice rapidly underwent an alcoholic fermentation, which, when sufficiently leavened, was drunk by the natives for its pleasing, intoxicating effect. For a time a draught of this liquid was highly recommended to consumptive patients and owing to its stimulating effect on the already buoyant spirits of the sufferers, it was considered a topical remedy but its duration of popularity was transitory.

18. Opium. From time immemorial this drug, in the form of a tincture, as a powder, or as an infusion has been recommended for the treatment and cure of consumption. Today we know that opium will not influence the phthisical process in the least—it is only for its anodyne and soporific effects that it has been used in the past and continues in favor at the present time.

CLASS C.

Pharmaceutical Preparations. Into this division may be placed all such remedies and medi-

caments that are prepared by the pharmaceutical houses or by the apothecary in his workshop, hence these remedies are of more recent date, some having been introduced as early as the eighteenth century but most of them date from the nineteenth. They will be described below in the order of their importance.

1. Creosote; Beechwood Creosote. The giving of creosote in the treatment of the consumptive disease is of comparatively recent origin. In the latter part of the past century it was deemed a sovereign remedy for the treatment of the phthisical but it gradually came into disfavor and today it is very little used for the treatment and cure of consumption. Its use had been attested by many good practitioners of medicine in the belief that it did possess curative properties but time and experience proved that its medical qualities were limited. As its ingestion lessens the secretions of the mucous surfaces, it had been recommended for the treatment of bronchial affections and in catarrh; hence, it was reasoned, creosote must contain curative properties that will favorably influence a consumptive process and the giving of small doses was most desirable. Even at the present time a mixture of creosote with cod-liver oil is still thought to be a beneficial combination for the medication of consumptive cases by physicians.

2. Glycerinum; Glycerine. This article of commerce has never been considered as a remedy in the treatment of consumption when used alone but when mixed with cod-liver oil to which it imparts a sweet taste, it is highly prized by the consumptive patient. A curative effect has never been attributed to glycerine but its use as an adjuvant, in combination with other remedies, improves their taste.

3. Maltum; Malt Extract. During the last two centuries an extract prepared from malt has been much in vogue. This extract is used as an emulsifying agent with many oils, especially cod-liver oil and prepared in this way, owing to its pleasing, sweet taste, it has been greatly in demand for the treatment of consumption; however, it has no curative properties as is so generally believed by the tuberculous patient.

4. Ferrum Albuminatum; Albuminate of Iron. This remedy is now well nigh forgotten as a specific for the many maladies for which it was prescribed; however, it is still a medicament of considerable value. Albuminate of iron when mixed with milk answers all the requirements of a good nutrient, hence its recommendation to tuberculous patients. For the medication of the consumptive during the last century it had a wide field but now it is of little use in this regard.

5. Syrupus Ferri Iodati (Syrup of the Iodide of Iron). This syrup and cod-liver oil have for many years been most highly prized as a medicament in the treatment and cure of consumption. In the past century this preparation was a strictly pharmaceutical remedy and remains as such at the present time. As a tonic this syrup may possess some medicinal value but as a cure or even as a benefit, when given to the consumptive, we have no proofs. We must admit, however, that very few drugs are administered to the consumptive these days.

6 Tincture Guaiac and Tincture Guaiac Ammoniata. These two tinctures of the resin of guaiac were much in use some years ago, chiefly in the last century. To dissolve the resin a strong alcoholic menstruum was required and in the administering of this tincture another alcoholic diluent was necessary so the ten to thirty or more drops were given in brandy or whiskey. As the consumptive is usually hopeful, with a buoyant spirit, the giving of this tincture in whiskey only served to increase the poor patient's cheerfulness, and he became more stimulated, which was considered as certain evidence that his disease was arrested. The giving of this tincture for consumption has now for many years been discontinued, still I do well recall that some forty years ago this tincture was administered for the cure of consumption. A middle-aged man, who was not a physician, neither was he a chemist nor an apothecary, became a little conversant with a few medicines while working in a laboratory of the Chicago Stock Yards, and convinced his friends that he had discovered a medicine that would positively cure consumption. A company was organized, an attorney secured as a member of the concern, and by advertising in country papers quite a number of far-advanced tuberculous patients came to receive the cure. It may be stated here, to the credit of the concern, that they were not charlatans—they were simply misguided, misinformed; they had no knowledge of medicine and did not know any better. No medicine was sold. Every patient was required to come to the office

for treatment two or three times a day, when the supposedly curative medicine was administered to each patient by the hands of the discoverer of this remedy. The treatment consisted of giving each patient about thirty drops of tincture of guaiac in a tablespoonful of whiskey. It is needless to say that not a single consumptive ever became well from taking this medicine. No physician was required, as the moribund condition of these patients was sufficiently advanced so that any one could make the correct diagnosis. I saw many of these unfortunates roaming around on the streets and about the home of the supposed cure. It finally dawned upon all of them that no cure for consumption had been discovered after all, and the concern eventually suspended their operations. Incidentally, in passing, it may be mentioned here that tincture of guaiac can be administered in an aqueous solution without the separation of the resinous particles, by giving it in milk—this, however, the aforementioned promoters did not know.

Pharmaceutical preparations that are usually prescribed for the use of the consumptive are designated as "Tonics" or "Body Builders," and it is very noticeable that most of such compounds contain a certain percentage of alcohol. They are simply stimulating mixtures to excite, in a measure, the buoyant nervous system and the hopeful spirits of the unfortunate tuberculous persons. An especially favorite prescription of a so-called "lung specialist," who was himself a phthisical individual, will illustrate my contention. A mixture of one bottle of John Hoff's Malt Extract (about fourteen ounces of a strong quality of beer), the juice of six lemons, six ounces of glycerine, and two ounces of sugar, was heated in a water bath for about fifteen or twenty minutes, and then sufficient Medford rum was added to make one quart. A teaspoonful to a tablespoonful of this compound was given three times a day—most tuberculosis patients preferred a tablespoonful three times a day instead of a teaspoonful. This occurred in the 80's of last century.

CLASS D.

Chemical Substances. Chemicals were not given for the treatment and cure of consumption in the seventeenth century, nor even in the eighteenth. As curative agents they came into use when chemical science had become established on a solid foundation and chemicals became known among the public as definite preparations that might possess medicinal value. It was not until the nineteenth century that chemicals for treating diseases of the human body came into general use, and for the cure of consumption we enumerate the following:

1. Manganese and its compounds were considered by many physicians of the last century as components of the blood, similar to its iron content, and it was deemed advisable to administer manganese compounds to the consumptive, thereby increasing the manganese component of the blood. This theory was disproved and its use as a favorable remedy in the treatment of consumptive disease was abandoned.

2. Iodoformium; Iodoform; Iodine Carbonate. With albuminous substances an albuminate of iodine can readily be compounded. In operative surgery for tuberculous peritonitis, very large doses may be employed with most gratifying results. In early operative practice it was most in use. During the last century a suspension of iodoform in cod-liver oil for internal use, was much in evidence; however, there is no advantage to giving pure iodine in cod-liver oil. Iodine as a remedy for the treatment of tuberculosis was not much in vogue during the past century, but today we know that the drug can be taken internally by the consumptive, in very large doses, with the most beneficial effects.

3. Nitrogenium; Nitrogen Gas. During the middle of the last century the inhalation of nitrogen, in lieu of ozone, was highly praised for the treatment of consumption, for asthma, for cough, for whooping cough, etc., but like ozone it was found to have no definite value, and had neither temporary nor lasting effect.

4. Salicin. A glucoside prepared from the bark of Salix—the willow or poplar tree. In the beginning of last century, when this drug first came into general use as a remedy for cough or whooping cough, the consumptives hopefully anticipated that it would prove a valuable remedy for their fever paroxysms, but its use was very limited and of little worth.

5. Acetonum; Acetone; Pyroacetic Spirits (an antiphthisical capsule consisting of acetone one part and cod-liver oil nine parts.) Although long ago this remedy was given for the relief of an irritable cough, and possibly with good success, it has been rejected for many years as a

mitigative medicine. Acetone, in the proportion of one part of acetone to one hundred parts of water, had also been used as an inhalant; and at one time was much favored as a medicament in the form of a demulcent (Acetone 2.5, Mucilage of Gum Acacia and simple syrup, each 25.0, water 150.0, to which a little acetate of morphine was added—about 0.3). A tablespoonful of this compound was given every three hours to the phthisical patient. At the beginning of the last century the medical profession approved this prescription, but today it is in disfavor.

6. Ammonium Urinicum: Urate of Ammonia (prepared from Guano—the dung of sea fowl). Some hundreds of years ago this was considered a specific in the treatment of consumption. It was given internally in the form of a solution or prepared in the form of an ointment to be applied locally. Its use as an antiphthisical remedy was never considered of much import; however, from the giving of ammonium urate to the consumptive for his ailment to the drinking of human urine was but a step. I vividly recall that in my earlier days, in the latter half of the past century, when I was just beginning the study of medicine, I made the acquaintance of a moribund young consumptive, about twenty-two years of age, who informed me that at last he had found a remedy which was curing his cough, and his disease as well, and that his remedy was nothing else than the drinking of his own urine. He said that every morning, after arising, he would draw a large glass or cupful of his own urine and drink it while it was still warm. "But, my good fellow, how can you drink your own urine?" I asked. He answered: "I must admit that at first it was a little repulsive, but since I have found that it will surely cure my disease, I have no difficulty in drinking it." This particular case came under my personal observation; however, I have knowledge of another one —but only from hearsay.

CONCLUSIONS AND SUMMARY

To epitomize the various views concerning the remedies used during the past years, and those which have been recommended as panaceas for the phthisical cure, would lead to endless controversies. Drugs were little used for the treatment of this disease in ancient times, but a change of climate, residence in the mountains, to remain much out of doors, to avoid intoxicants, venereal and other excesses, and to drink freely of milk—these were the regulations prescribed for the consumptive to follow.

The giving of drugs or medicines was then unknown, this beginning when the physician was called to the bedside and observed that he must give something for the mitigation of pain or for the relief of symptoms. With the establishment of the first sanatorium for the cure of the tuberculous by Dr. Herman Brehmer, in Gorbersdorf, Germany, in the middle of the last century, a step was taken toward a method of treatment, which was accompanied by the giving of drugs, with rest and passive exercise, a nutritious diet and a proper mode of living. About 1882, in our own country, Dr. Edward L. Trudeau, himself a consumptive, at Lake Saranac, New York, learning of the Brehmer and Dettweiler treatment of tuberculosis, at once applied the method to a few of his patients, at a hastily improvised sanatorium and was much impressed with its success. However, it was not until the discovery of the "tubercle bacillus" by Dr. Robert Koch, in 1882, as the causative, etiological factor of all the various forms of this disease, that an intensive study of tuberculosis began, which has been maintained ever since, with a gradually increasing interest from year to year. Drugs now began to be more freely given than formerly, but a still greater impetus followed when the medical treatment for consumption was accompanied by a surgical technique. From many years of observation, chiefly during the last century, it has been noted that if the lungs are quiescent the tuberculous process will become arrested. After considerable experimental work by English, French, German, Italian and other nationalities interested in pulmonary studies, Forlanini of Padua, Italy, called attention to his observations, first in 1882, and again in 1894, at the International Tuberculosis Congress in Rome, on pneumothorax, or lung compression, and in our country at the Dr. John B. Murphy School, in 1898 and 1899. Still the surgical technique for the arrest of the tuberculous process was very little heeded; and the first paper presented before the National Tuberculosis Association's annual meeting by Dr. Mary E. Lapham, of Highland, N. C., who in 1912 reported her findings on thirty-one cases of lung compression, was severely criticized and

even ridiculed by a supposed authority on the disease; tuberculosis. The same fate, but no criticism, met the reading of a paper on the same topic by Drs. Louis Hamman and Martin B. Sloan, of Baltimore; and it was not until two years later, when Dr. Gerald Webb, of Colorado Springs, presented his paper on lung compression, that phthisiotherapeutists quickened to the importance of this valuable therapeutic measure, and fourteen leading clinicians participated in the discussion. Since that time and up to the present, one or more papers are offered at every meeting of the National Tuberculosis Association on this important surgical measure. Compression of the lungs, or pneumothorax, was at first applied on the tuberculous subject in only exceptional, in extreme cases—hemorrhagic, high fever, etc., but, as a rule, the principle of lung compression is applied today in most every case of tuberculosis—incipient, moderately advanced, and even in the far-advanced cases. In the cure of tuberculosis, not only pneumothorax as a surgical measure is applied, but all the other methods are indicated in selected cases—like phrenecotomy, phrenecectomy, exeresis, pneumonectomy, pneumolysis, thoracoplasty, etc. Under medical and surgical care in the treatment of tuberculous patients, the six most important rules, as indispensable adjuncts for the arrest of the disease, which are as much necessary now as ever, are rest, wholesome food, wholesome fresh air, ease of mind, obedience and time. Since the discovery of the tubercle bacillus, which has been followed by an intensive study of tuberculosis as a disease entity in all parts of the world, both the administration of the medical remedies and the application of the surgical measures, being interwoven, are essential in the arrest and cure of tuberculosis.

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THE DEATH TOLL OF THE HUNTING SEASON

According to the statistical bulletin of the Metropolitan Life Insurance Company, August, 1938, there is each year nearly 7,000,000 persons who obtain licenses to hunt with firearms. Licensed to kill wild animals, the inexperienced, unskilled, or careless hunter unfortunately may become the killer of men. The frequent deaths and injuries by accidental shooting among hunters indicate that many either know or care little about the proper handling of a gun.

About 1,000 persons are killed annually in such hunting accidents. Government statistics for the entire country reveal that nearly 3,000 persons are fatally wounded each year in firearm accidents generally. The statistics do not show separately what percentage of these occur in hunting, but the records of several individual States, as well as those of the Industrial policyholders of the Metropolitan Life Insurance Company, indicate that about one-third of the total—or 1,000—fatal shooting accidents are incurred by hunters afield. Hundreds more are killed annually by firearms while preparing for the hunt—cleaning guns, at target practice, etc. In the hands of children, hunters' guns carelessly left around the home have far too often figured in tragedies.

An analysis of the records of 133 deaths in typical shooting accidents on the hunt, which occurred among Industrial policyholders of the Metropolitan Life Insurance Company in the period of 1935 to 1937, inclusive, reveals some details of the conditions surrounding these fatalities and suggests precautions which the hunter must observe to avoid such accidents. These fatalities fall mainly into three classes: (*a*) Deaths from wounds accidentally self-inflicted; (*b*) deaths due to accidental shooting by a companion; and (*c*) deaths from accidental shooting by hunters in another party.

Deaths resulting from self-inflicted wounds were the most frequent, accounting for a total of 60, or 45 per cent of the fatalities. Sixteen of these deaths resulted when hunters slipped, stumbled, or fell, and their guns were accidentally discharged on hitting the ground or other objects. Risky and unsteady footing while climbing banks, slipping on frozen ground, failure to keep the gun locked in the "safe" position, and carrying the gun in dangerous positions, were some of the contributing factors in these accidents. Climbing over or through a fence while carrying a loaded gun, or pulling a loaded gun muzzle-first through a fence, caused 13 deaths. Ten were killed as they lifted loaded guns from automobiles, canoes, or other vehicles of transportation. Four deaths took place when guns carelessly carried became entangled in thick brush and discharged. Four men also were killed by the accidental discharge of guns held between their knees as they sat on the ground. Other deaths from self-inflicted wounds resulted when hunters dragged loaded guns up trees, dropped guns to the ground, or when guns with faulty mechanisms discharged.

Accidental shooting by a hunting companion was responsible for 48 of the tragedies, or 36 per cent. The

accidental discharge of a companion's gun caused 39 fatalities. Excitement, overeagerness, hurry, or carelessness when about to shoot or on suddenly sighting the desired quarry were frequent causes. In some cases the hunter accidentally hit his gun against a tree as he was about to shoot. Others, as in the case of self-inflicted wounds, were using guns with faulty mechanism. Several were killed when a companion's gun dropped to the ground or hit an object as he tripped, stumbled, or fell to the ground. By a curious irony of fate, one man was killed when he grasped the arm of a companion, just as the latter pulled the trigger, to prevent him from shooting at a bird protected by the game laws. Five were killed when they stepped into the line of fire of another marksman. Three fatalities resulted when bullets struck a tree or frozen ground and ricocheted, striking a companion of the marksman.

Nineteen persons, or 14 per cent of the total 133 victims, were killed by hunters in parties other than their own. Nine of these 19 were mistaken for deer or smaller game by hunters who were too impatient to take the time to distinguish the object definitely, or who hurriedly fired as soon as they saw a disturbance in thick underbrush. Stray bullets accounted for six deaths. Four fatalities occurred when a hunter coming from behind a building, over the crest of a bank, etc., stepped into the line of fire of another's gun.

Five hunters were killed while resting, by the accidental discharge of guns set against rocks or trees. In some manner these guns fell or were knocked down and discharged. One hunter was shot by a farmer who mistook him for a prowler.

Not until hunters become more careful in the handling of guns and realize the dangers involved can we expect a decline in accidental hunting deaths. Some States have recently made efforts to promote safety among their hunters. Laws have been passed giving State Conservation Departments authority to revoke licenses for long periods or permanently when carelessness is shown. In certain cases a charge of manslaughter has been made mandatory. These are moves in the right direction, and it is to be hoped that they will be extended.

CATHOLIC HOSPITAL ASSOCIATION CONDEMNS SOCIALIZED MEDICINE; STANDS BY A. M. A.

The *Buffalo Academy of Medicine Bulletin* states that a resolution adopted at the closing session of the twenty-third annual convention of the Catholic Hospital Association of the United States and Canada, held in the 174th Armory, Buffalo, June 13 to 17, disapproved the socialization of medicine by declaring "that whatever shifts in viewpoint concerning the fundamentally ethical considerations of medical care be introduced, those basic principles concerning the personal relationship of the patient and physician, the implication of sound, ethical obligations, the fixing of personal responsibility for medical care, the confidential character of the relationship between patient and physician and similar fundamental considerations must by all means be safeguarded lest we enter upon untried social procedures in supplying medical attention to the detriment not only of public health, but also to the detriment of the individual patient's health. The Association, therefore, reiterates its confidence in the persisting validity of medical practice as enunciated by the American Medical Association."

In regard to the extension of the Federal hospitalization program, the Association recorded its fears "that the persistent repression of the importance of the private hospital and the aggrandizement of the government institution might result in undesirable, even harmful standardization, in extravagance and waste, in inefficiency, and probably will undermine the civic spirit in communties precisely at a time when it seems most necessary to strengthen that spirit and the community's increasing consciousness of the importance of adequate health care."

Three hundred and twenty-five hospitals were represented at the convention by upwards of 800 delegates.

HIGH HUMAN TEMPERATURE

We have been asked more than once for information relative to the highest temperature that the human body can reach and still survive. We quote the following taken from queries and minor notes of the American Medical Association Journal. The data is furnished by William D. Reid, M. D., Boston.

To the Editor:—The subject of high human temperature is discussed in Queries and Minor Notes in THE JOURNAL, February 5, page 461, and April 2, page 1127. Regarding the highest temperature that the human body can reach and still survive, the following (taken from Reid, W. D.: One Hundred and Fifty-Eight Cases of Heat Prostration Treated at the Boston City Hospital, July 2-13, 1911, *Boston M. & S. J.* 165:643 [Oct. 26] 1911) may be of interest:

Temperature	Cases	Deaths
—105	10	1
105—106	8	4
106—107	8	5
107—108	6	6
108—109	14	10
109—110	15	12

The high mortality, 58 per cent, in these cases of heat stroke was doubtless influenced by the complications: At admission to the hospital: alcoholism, failing heart, edema of the lungs and convulsions. Subsequent: delirium tremens, persistent coma, pneumonia and recurrence of fever.

EVERYTHING BUT SCIENCE, RELIGION AND SEX ARE STANDARDIZED IN AMERICA

Sinclair Lewis assails propaganda. We quote the *Los Angeles Herald-Express,* January 19, 1938, as follows:

Lively as a cricket, a tall scholarly man with red hair skipped from subject to subject in conversation like a water bug across the surface of a pond.

It was novelist and Nobel prize winner Sinclair Lewis talking at the Biltmore Hotel after his arrival here from Chicago by Santa Fe train to lecture on

"Propaganda and Poppycock" tomorrow night at the Shrine Auditorium.

"Everything but science, religion, and sex are standardized in America," said Lewis as he crossed his elegantly silk-sheathed ankles.

"This is the result of the mass thinking that is spread to millions through the radio, movies, and press.

"All that would be necessary for a dictator to end democracy would be to control the media that already are ending individuality in America.

"Since we are all coming to think and talk alike, all that is necessary is to get us to thinking a dictator would be a good idea." . . .

Skipping back to propaganda, Lewis said:

"These propaganda forces are standardizing American thought and may make the nation susceptible to anti-democratic forces, singularly enough, by using the very scientific marvels that pioneer American individuality and initiative produced. . . .

"The syndicated writers are among the most effective propagandists, for they influence millions of readers, and for that reason the quality of their writings ought to be increased tremendously."

NEED OF REDETERMINING SCHICK NEGATIVENESS IN SCHOOL CHILDREN

A. B. Schwartz and F. R. Janney, Milwaukee (*Journal A. M. A., May* 21, 1938), state that during the last year or two there has been an apparent increase in the incidence of diphtheria among supposedly Schick negative children. These occurrences warrant serious consideration of the present status of Schick immunity in the present large school population. As it is now the practice to immunize against diphtheria at about 9 months of age and to perform a Schick test within the following several months, many school children have had an interval of five years or more following the immunization procedure by the time they enter school. The importance of a Schick test following the immunization procedure has been repeatedly emphasized, but, once a negative Schick test has been obtained, the immunity has been generally assumed to be permanent. Whatever materials or method of immunization is followed, the immunity of the school child to diphtheria should be insured by either a routine Schick testing on all children entering school or by the administration of a routine dose of 1 cc. toxoid at the time of entering school, as suggested by Fraser and Brandon. In order to maintain the low incidence of diphtheria in the United States, one of these two measures should be made a routine part of preventive medicine.

Marriages

Robert Clements to Miss Eunice Tanner, both of Danville, Ill., in Champaign, August 4.

John M. Dorsey to Mrs. Charlotte Burns Hoefer, both of Chicago, June 29.

Rudolf William Hack, Momence, Ill., to Miss Willette Mary Drummond of Chicago in July.

Personals

Dr. Paul H. Harmon of Chicago, Illinois, addressed the Woodford Medical Society on Monday, September 19, on the subject "The Diagnosis and Treatment of Suppurative Arthritis of the Hip with Special Reference to Pathological Dislocation.

Dr. Herman M. Soloway, Chicago, has been appointed venereal disease control officer of the State Department of Health. The newly created post was made possible by funds allotted to the state by the U. S. Public Health Service. Dr. Soloway graduated at the University of Illinois College of Medicine in 1922.

Dr. Loren L. Collins, Chicago, has been appointed full time medical director of the LaSalle County Tuberculosis Sanatorium, Ottawa, effective September 1; Dr. Albert J. Roberts has held the position since it was created in 1919 on a part time basis.

Dr. Joseph H. Kinnaman, Charleston, W. Va., has been appointed assistant health commissioner of Peoria with supervision of school health activities, effective Aug. 15. Dr. Kinnaman formerly served as health officer of Topeka, Kan., as assistant health commissioner of Cincinnati, as instructor, department of pharmacology and materia medica, State University of Iowa College of Medicine, Iowa City, 1927-1930, and as deputy commissioner to the Iowa State Department of Health in charge of child health and health education activities.

Clifford Grulee and William J. Dieckmann presented the scientific program at the September 22nd meeting of Knox and Warren County Medical Societies at Galesburg. Their subjects were "Care of the Premature Infant" and "Forceps Delivery."

At the meeting of the Wisconsin State Medical Society held in Milwaukee, on September 15th, Herman L. Kretschmer read two papers by invitation. One was on the "Medical Management of Chronic Prostatitis" and the other on the "Significance of Blood in the Urine."

William D. McNally delivered an address before the Michigan State Medical Society in De-

troit on September 21st, on "The Sequelae of Carbon Monoxide Poisoning."

The joint annual session of the American Congress of Physical Therapy and the American Occupational Therapy Association, was held at the Palmer House, in this city, September 12, 13, 14 and 15.

The Second Annual Symposium on Occupational Disease of the Department of Industrial Medicine of the Northwestern University Medical School was held on September 26 and 27, 1938 at Thorne Hall on the Chicago Campus.

The Fifteenth Annual Meeting of the North Central Branch of the American Urological Association was held in Peoria, on September 29, 30 and October 1.

James H. Hutton addressed the Jefferson-Hamilton County Medical Society at Mt. Vernon, September 20, subject "Endocrine Therapy of Proven Value."

The Second Annual Symposium on Occupational Disease of the Department of Industrial Medicine of the Northwestern University Medical School was held on September 26 and 27, 1938 at Thorne Hall on the Chicago Campus.

Theodore T. Stone has just returned from the Union of South Africa where he addressed the British Medical Association, South African Medical Association, the John Saner Medical Club and the Graduate Medical Association of the Witwatersrand University of Johannesburg.

I. Harrison Tumpeer addressed the Graduate Education Meeting under the joint sponsorship of the Indiana State Medical Association, Third District Medical Society, and the Orange County Medical Society at the French Lick Springs Hotel on Wednesday, September 7 on the subject of "Pediatric Adventures in Allergy."

Arthur H. Conley was invited to address the Marion County Medical Society on September 15, subject, "Injuries to and Fracture of the Bones."

The Fifteenth Annual Meeting of the North Central Branch of the American Urological Association was held in Peoria, Illinois on September 29, 30 and October 1.

At a meeting of the Peoria County Medical Society at Peoria, September 20, Drs. Ford K. Hick and Conrad S. Sommer, Chicago, will discuss various aspects of internal medicine.

A symposium on pediatrics and obstetrics will be sponsored by the Jo Davis and Carroll County Medical Societies at Elizabeth, September 21; the speakers will be Drs. Arthur H. Parmelee, Oak Park, and William F. Mengert, Iowa City, on "Diseases of the Newborn" and "Treatment of Prolonged Labor" respectively.

Dr. Raymond A. Tearnan, Decatur, will address the Christian County Medical Society September 21 on "Endocrine Factors in Various Gynecologic Disorders."

The Henry County Medical Society was addressed in Kewanee September 8 by Dr. Charles E. Galloway, Evanston, on obstetrics. A paper on pediatrics was read by Dr. John A. Bigler, Highland Park.

Dr. M. Herbert Barker, Chicago, discussed "Nephritis and Edema" before the Kankakee County Medical Society at Kankakee, September 8.

At a meeting of the county medical society at Effingham, September 13, Dr. Frank Deneen, Bloomington, spoke on "Diagnosis and Medical Treatment of Liver and Gallbladder Conditions."

Dr. Herbert E. Schmitz, Chicago, discussed gynecology before the Coles-Cumberland County Medical Society at Mattoon, September 14.

The Marion County Medical Society was addressed at Centralia, September 15, by Dr. Arthur H. Conley, Chicago, on "Injuries to and Fracture of the Bones."

Dr. Arthur E. Hertzler, Halstead, Kan., discussed the thyroid gland before the Sangamon County Medical Society in Springfield, September 1.

Dr. Edwin C. Ernst, St. Louis, discussed cancer before the Madison County Medical Society in Alton, September 2.

Dr. Martha MacDonald, who for three years has been in charge of the Children's Division of the Department of Psychiatry at Michael Reese Hospital, has been appointed director of a new child guidance clinic established in New Orleans. This clinic has been made possible through the contribution of Mr. Samuel Zemurray, President of the United Fruit Company. It will be closely associated with the Departments of Medicine of Tulane and Louisiana State University and promises to fill a long felt need in New Orleans and to provide leadership to this section of the country. No announcement has been made as yet of the appointment of a successor to Dr.

MacDonald at Michael Reese Hospital in Chicago, although such an appointment will be made.

News Notes

—The University of Chicago has appointed a committee on cancer to correlate its program of research and the clinical treatment of cancer. According to the announcement the creation of the committee, which will operate virtually as a cancer institute, was made necessary by the comprehensive nature of modern investigation of the disease. The new committee will correlate all basic research with the efforts of the clinical departments and serve as a clearing house for all the university investigators in nine departments; it will also advise the administration as to needs and policies of the general program. Members of the committee include:

Dr. Alexander Brunschwig, chairman of the committee.

Dr. Fred L. Adair, chairman of the Department of Obstetrics and Gynecology and Chief of Staff of the Chicago Lying-In Hospital.

Dr. Percival Bailey, Professor of Surgery (neurosurgery) and Neurology.

Arthur H. Compton, Ph.D., Charles H. Swift distinguished service professor of physics.

Dr. George F. Dick, chairman of the Department of Medicine.

William D. Harkins, Ph.D., Andrew MacLeish distinguished service professor of chemistry.

Dr. Paul C. Hodges, Professor of Roentgenology.

Thorfin R. Hogness, Ph.D., Professor of Chemistry.

Fred C. Koch, Ph.D., chairman of the Department of Biochemistry.

Ezra J. Kraus, Ph.D., chairman of the Department of Botany.

Dr. Dallas B. Phemister, chairman of the Department of Surgery.

Maud Slye, Sc.D., Associate Professor of Pathology.

Dr. Paul E. Steiner, Assistant Professor of Pathology, secretary.

Dr. Harry Gideon Wells, chairman of the Department of Pathology.

Announcement was also made that the university had received a total of $11,750 in grants and gifts for work on cancer. Three grants totaling $7,500 were from the National Advisory Cancer Council of Washington and will facilitate research on the influence of cancer on stomach secretions, research on hormones and on chemical substances in cancer tissues. The International Cancer Research Foundation made a grant of $2,000. The Educational Association on Cancer has given the university $2,250 to establish a lectureship on cancer and bring noted scientific speakers to the quadrangles.

—A drive against syphilis will be launched in the city, September 5, by business groups, who will participate in a campaign started last year by the Chicago Department of Health under the auspices of the U. S. Public Health Service. Included in the cooperating agencies are the State Street Council, representing major loop merchants; the Chicago Association of Commerce, representing leading industries; the Cook County Retail Council, an organization of community merchants, and the Illinois Federation of Retail Associations, representing twenty-one city and state merchant associations. Their first step will be to provide educational and lecture material on syphilis for all employees, according to the Chicago *Tribune*. It was stated that thirty-three concerns, including steel companies, drug stores, laundries, restaurants and bakers, have provided syphilis testing programs for their employees since last April. Since last November, when the field tests began, 79,533 have volunteered, including 7,421 high school and college students and 6,742 grade school pupils.

—A new building to replace the central structure of the present St. John's Hospital, Springfield, is now under construction. When completed, the main part of the unit will be twelve stories high and cost $1,200,000. The first floor will accommodate the physical therapy department, kitchens, coffee shop, pharmacy and central sterilizing department as well as the lobby and waiting rooms. The second to seventh floors will contain rooms and wards, while the eighth floor will be devoted to infectious diseases. The ninth floor will contain the septic surgical department, surgical dressing and specialists' departments, separate provisions being made for treatment of the eye and throat, dental work and bronchoscopy under both local and general anesthesia. The operative floor is the tenth with

laboratories on the eleventh. Solariums and storage rooms occupy the twelfth floor. The thirteenth and fourteenth floors cover only a small part of the building area and are used for the mechanical equipment. Rev. J. L. Gatton is director of the hospital.

Deaths

George Stewart Allen, Mackinaw, Ill.; Rush Medical College, Chicago, 1902; also a dentist; aged 70; died, May 5, of heart disease.

Carl L. Cheney, De Kalb, Ill.; Chicago Homeopathic Medical College, 1902; aged 63; died, July 9, in the Public Hospital, of heart disease.

Clyde Lowe Casey, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1913; member of the Illinois State Medical Society; served during the World War; aged 49; died, July 19, in Marion, Ill., of chronic lymphatic leukemia.

Thomas A. Copeland, Athens, Ohio; College of Medicine and Surgery, Chicago, 1887; member of the Ohio State Medical Association; for many years secretary of the Athens County Medical Society; served on the local examining board during the World War; aged 73; died, July 9, of cerebral arteriosclerosis and hypertension.

William J. Dugan, Paris, Ill.; Missouri Medical College, St. Louis, 1899; aged 64; died, July 12.

Joseph R. Ebersole, Monmouth, Ill.; Hahnemann Medical College and Hospital, Chicago, 1888; medical director of the Illinois Bankers Life Assurance Company; formerly member of the school board and county coroner; aged 78; died, July 29.

Charles Dudley Eldred, a Fellow A. M. A., Joliet, Ill.; Northwestern University Medical School, Chicago, 1914; fellow of the American College of Surgeons; served during the World War; past president of the Will-Grundy County Medical Society; surgeon to St. Joseph's and Silver Cross hospitals; aged 51; died, June 25, in St. Luke's Hospital, Chicago, of chlelithiasis, common duct stone and acute pancreatitis.

Emanuel Friend, a Fellow, A. M. A.; Chicago; Rush Medical College, Chicago, 1890; formerly instructor in surgery at his alma mater; fellow of the American College of Surgeons; for many years on the staff of the Michael Reese Hospital; co-editor of the fourth edition of "Principles of Surgery," by Dr. Nicholas Senn; aged 70; was found dead, July 19, of chronic myocarditis.

James Michael Glynn, Chicago; Rush Medical College, Chicago, 1892; member of the Illinois State Medical Society; aged 71; died, July 3, of uremia.

Green Ewing Hill, a Fellow, A. M. A.; Girard, Ill.; Rush Medical College, Chicago, 1890; past president of the Macoupin County Medical Society; aged 75; died, July 3, of heart disease.

Frank Kadlec, a Fellow, A. M. A.; Chicago; Loyola University School of Medicine, Chicago, 1916; served during the World War; for many years attending physician to the Infant Welfare, Department of Health, City of Chicago; on the staff of the Jackson Park Hospital; aged 48; died, July 14, of pulmonary embolism and acute appendicitis.

Oscar F. Plummer, Macon, Ill.; St. Louis College of Physicians and Surgeons, 1903; aged 67; died, June 14, of cerebral hemorrhage.

Anneta Ayers Saunders, a Fellow, A. M. A.; Chicago; National Homeopathic Medical College, Chicago, 1896; Harvey Medical College, Chicago, 1897; Dunham Medical College, Chicago, 1899; aged 76; died, June 20, of chronic myocarditis and nephritis.

John B. Scruggs, O'Fallon, Ill.; St. Louis College of Physicians and Surgeons, 1898; member of the Illinois State Medical Society; past president of St. Clair County Medical Society; aged 71; died, July 4.

Austin Keeler Van Dusen, a Fellow, A. M. A.; Chicago; Northwestern University Medical School, Chicago, 1923; clinical assistant in pediatrics at his alma mater, 1930-1933; on the staff of the Illinois Masonic Hospital; aged 39; died, June 22, of coronary occlusion.

Charles Bruce Walls, Chicago; Chicago Homeopathic Medical College, 1894; aged 81; died, June 24, in the Veterans Administration Facility, Hines, Ill., of bilateral pyelonephritis.

Dr. J. R. Ebersole, a member of the Fifty Year Club and an Emeritus Member of the Illinois State Medical Society, died at Monmouth on July 29, 1938. Dr. Ebersole was born in Pennsylvania in 1859, was graduated from Hahnemann Medical School, Chicago, in 1888, and soon after his graduation, located in Monmouth. He had a special inclination for obstetrics, and had records of more than 2,500 cases which had been under his care.

In 1897 he was one of a group which formed the Illinois Bankers Life Assurance Company, and was medical director of that company until his death, a period of 41 years. He was probably the oldest medical director of a life assurance company in years of service, in the entire country.

Dr. Ebersole was local surgeon for the C. B. & Q. Railroad for 36 years, a Fellow of the American Medical Association, a member of the Illinois State Medical Society, the Warren County Medical Society, for more than 35 years. He married Miss Addie M. Over of Sterling, Illinois, on October 15, 1890. The surviving members of the family are Mrs. Ebersole and three children, Dr. H. Glenn Ebersole of Monmouth, Mrs. Ruth Zimmer of Colorado Springs, and Robert Ebersole of Evanston.

For many years Dr. Ebersole taught a men's bible class at the Methodist Church; he was a member of the Monmouth Rotary Club, a 32nd degree Mason, and a member of Mohammed Temple, A. A. O. N. M. S., in Peoria, and was always interested in civic affairs in his home community. Although in poor health for several years, he carried on his insurance work and maintained his interests in church and clubs to the end.

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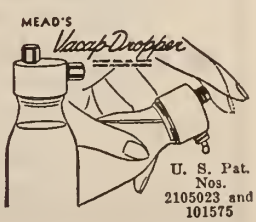
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Book Reviews

THE NEW INTERNATIONAL CLINICS: Edited by George Morris Piersol, M. D. Volume III, New Series One (old 48th). 1938. Philadelphia, Montreal, New York. J. B. Lippincott Company.

This is a work of original contributions; clinics; and evaluated reviews of current advances in the medical arts by outstanding physicians throughout the United States.

PLASTIC SURGERY: By Arthur Joseph Barsky, M. D., D. D. S., Associate Surgeon in charge of the Department of Reconstructive Surgery, Beth Israel Hospital, New York City; Adjunct Professor of Plastic Reparative Surgery, New York Polyclinic Medical School and Hospital; Associate Plastic Surgeon to the Morrisania City Hospital, New York City; Plastic Surgeon to the Beth El Hospital, Brooklyn, New York; Consulting Plastic Surgeon to the New York State Reconstruction Home, West Haverstraw, New York. 355 pages with 432 illustrations. Philadelphia and London: W. B. Saunders Company, 1938. Cloth, $5.75 net.

This book is a clinically evaluation of methods, not merely theoretical discussion. The work is based on material that the author presented to post-graduate students and is the result of more than ten years of intensive work in the specialty.

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS: By George W. Norris, A. B., M. D., formerly Professor of Clinical Medicine in the University of Pennsylvania; Chief of Medical Service"A", Pennsylvania Hospital; Erstwhile Colonel, M. C. U.S. Army; and H. R. M. Landis, A. M., M. D., Sc. D., formerly Professor of Clinical Medicine in the University of Pennsylvania. Sixth Edition, Revised. 1019 pages with 478 illustrations. Philadelphia and London: W. B. Saunders Company, 1938. Cloth, $10.00 net.

In order to bring this book abreast of the times, expensive changes have been entailed. Besides many deletions, substitutions and additions throughout the text in general, the portions dealing with bronchial asthma, bronchiectasis, lung abscess and cystic disease, the relations of nasal and accessary sinus disease to infections to the lower air tract, have been completely rewritten.

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Book Reviews

Experience in the Management in Fractures and Dislocations. By the staff of the fracture service Massachusetts General Hospital under the editorship of Philip D. Wilson, M. D. 1419 illustrations in the text on which 1192 are lined tracings of roentgenograms in case reports. Philadelphia-London-Montreal. J. B. Lippincott Company 1938. Price $15.00.

In presenting this work the authors hoped that it will overcome some of the many difficulties encountered in treating fractures and dislocations. Its material differs from that of other treatises in that it is based upon the actual study of cases and the analysis of the results of treatment. Its conclusions are fortified not only by the observations of the patients during their stay in the hospital, but by the actual examination of the same patients a year more after discharge from the hospital with critical appraisal of the results in terms of anatomic restoration, functional recovery and working ability or earning power. The study comprised a group of approximately 3985 patients with 4390 fractures and disclocations treated between the years 1923 to 1930 inclusively.

You Can Sleep Well. The A B C's of Restful Sleep for the Average Person. By Edmund Jacobson, M. D. New York-London. Whittlesey House, McGraw-Hill Company. 1938. Price $2.00.

This work presents six concise and easy-to-follow steps towards restful sleep. It also discusses the general problem of relaxation and such important topics as drugs, dreams, and your child's sleep.

This is a book not only for the confirmed insomniac but for normal people, doctors, nurses—everyone who wants to get the most out of sleep.

Laboratory Manual of Hematologic Technic. By Regina Cook Beck, M. A., M. D., Formerly Instructor in Pathology and Bacteriology at George Washington University Medical School; Head of the Department of Bacteriology, William and Mary College Extension; Pathologist to Stuart Circle Hospital and Director of the Stuart Circle Hospital School of Medical Technology, Richmond, Va. With a foreword by Frank W. Konzelmann, M. D., Professor of Clinical Pathology, Temple University, Philadelphia. 389 pages with 79 illustrations. Philadelphia and London: W. B. Saunders Company. 1938. Cloth, $4.00 net.

This Manual should prove a valuable guide, not only for the technologist, but all students of hematology will find it most helpful. At this writing there is no other single volume where so much information on the subject of procedure in hematology is contained between two covers.

Surgical Pathology. By William Boyd, M. D., LL. D., M. R. C. P. Ed., F. R. C. P. Lond., Dipl. Psych., F. R. S. C., Professor of Pathology, University of Toronto. Fourth Edition, Thoroughly Revised. 886 pages with 476 illustrations and 15 colored plates. Philadelphia and London: W. B. Saunders Company. 1938. Cloth, $10.00 net.

This work presents those aspects of pathology which will prove most useful to the surgeon. This work should prove a most valuable addition to every medical library, either private or public.

The Principles and Practice of Obstetrics. By Joseph B. DeLee, A. M., M. D., Professor of Obstetrics and Gynecology, Emeritus, University of Chicago; Consultant in Obstetrics, Chicago Lying-in Hospital and Dispensary, Consultant in Obstetrics, Chicago Maternity Center. Seventh Edition, Entirely Reset. 1211 pages with 1277 illustrations on 985 figures, 271 of them in colors. Philadelphia and London: W. B. Saunders Company. 1938. Cloth, $12.00 net.

In this work the author has brought the subject of the principles and practice of obstetrics up-to-date. 44 new pages has been added and a number of new illustrations appear in this edition.

The Pneumonias: By Hobart A. Reimann, M. D., Professor of Medicine, Jefferson Medical College, Philadelphia; formerly Professor of Medicine, University of Minnesota; formerly Associate Professor of Medicine, Peking Union Medical College, Peking, China. With a Foreword by Rufus Cole. 381 pages with 111 illustrations. Philadelphia and London: W. B. Saunders, 1938. Cloth, $5.50 net.

This work is intended for the general practitioner and the student of medicine. It is designed to emphasize modern methods of classification, diagnosis, prevention and treatment of acute pulmonary infection.

The Etiology of Trachoma: By Louis A. Julianelle, Chairman of the Tracoma Commission. Washington University. St. Louis. New York. The Commonwealth Fund. 1938. Price $3.25.

This volume gives a summary of the work done by the Trachoma Commission at Washington University, as part of a comprehensive and detailed review of the whole subject.

In addition to its importance to ophthalmologists, this intensive study may be of value to bacteriologists and pathologists.

Practical Microbiology and Public Health. By William Barnard Sharp, M.D. Illustrated. St. Louis. C. V. Mosby Company. 1938. Price $4.50.

This work is intended for students of medicine, public health, and general bacteriology. The book is a practical text with experimental matter organized according to the student's technical progress and other laboratory and field considerations.

Feminine Hygiene in Marriage. By A. F. Niemoller, M. A. New York, Harvest House. 1938. Price $2.00.



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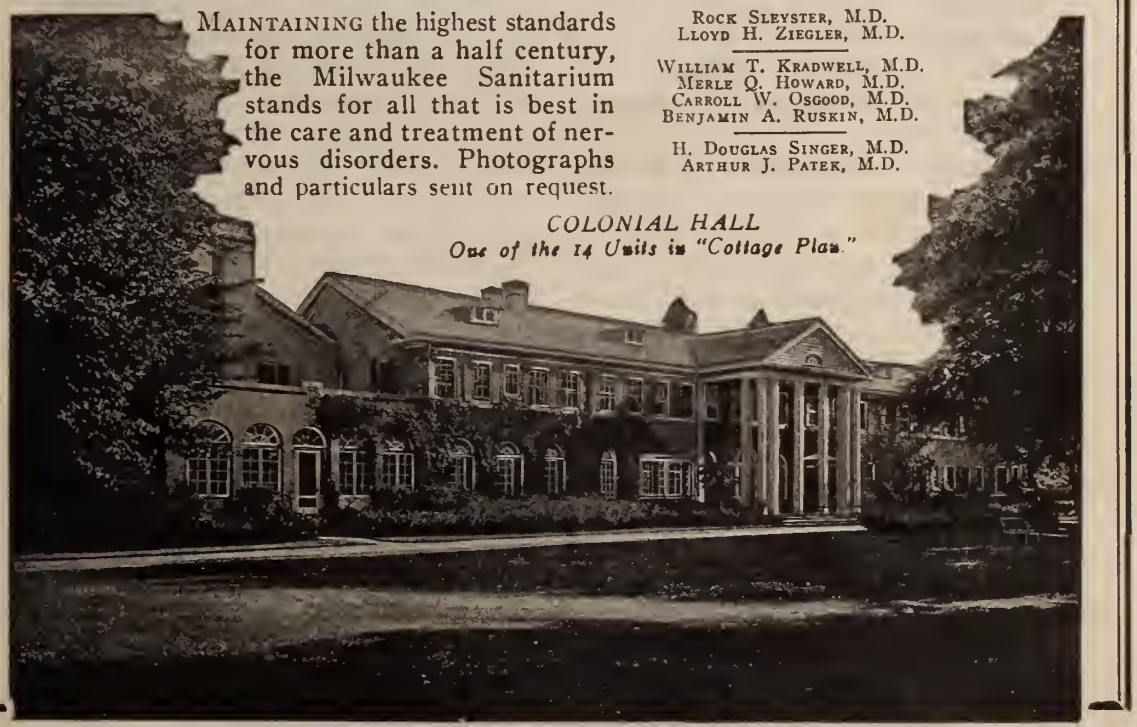
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[1] Dorff, G. B.: *J. A. M. A.* 110:1799 (May 28) 1938.
[2] Thompson, W. O. and Heckel, N. J.: *J. A. M. A.* 110:1813 (May 28) 1938.
[3] Novak, Emil: *J. A. M. A.* 105:662 (Aug. 31) 1935.
[4] Mazer, C. and Goldstein, L.: Clinical Endocrinology of the Female, W. B. Saunders Co., Philadelphia, 1932.

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Physiological and clinical researches have provided explanations of the mode of absorption of the vitamin and the mechanisms of transport and storage in the body (2). The specific pathological effects of varying degrees of vitamin A deficiency in humans have been extensively studied. Many of the older ideas concerning specific effects of vitamin A on man have been confirmed; some of the older beliefs have been dispelled (2).

Recent years have also brought improvements in assay methods for vitamin A (3). Common American foods have been surveyed and their vitamin A values tabulated (4). Last but not least, authoritative estimates are at hand as to the quantitative requirements of children and adults for vitamin A (5). Such, in brief, are only a few of the important additions which have been made to our knowledge of this essential dietary factor. Today, students of nutrition favor the practice of "protective nutrition" in which the individual is maintained upon a diet calculated to supply all known dietary essentials—vitamin A included—in optimal amounts insofar as these amounts may be known. In specific instances, such dietaries must be supplemented by vitamin-rich materials. However, the prime consideration is to provide a properly formulated basic diet. In this connection, commercially canned foods are worthy of mention.

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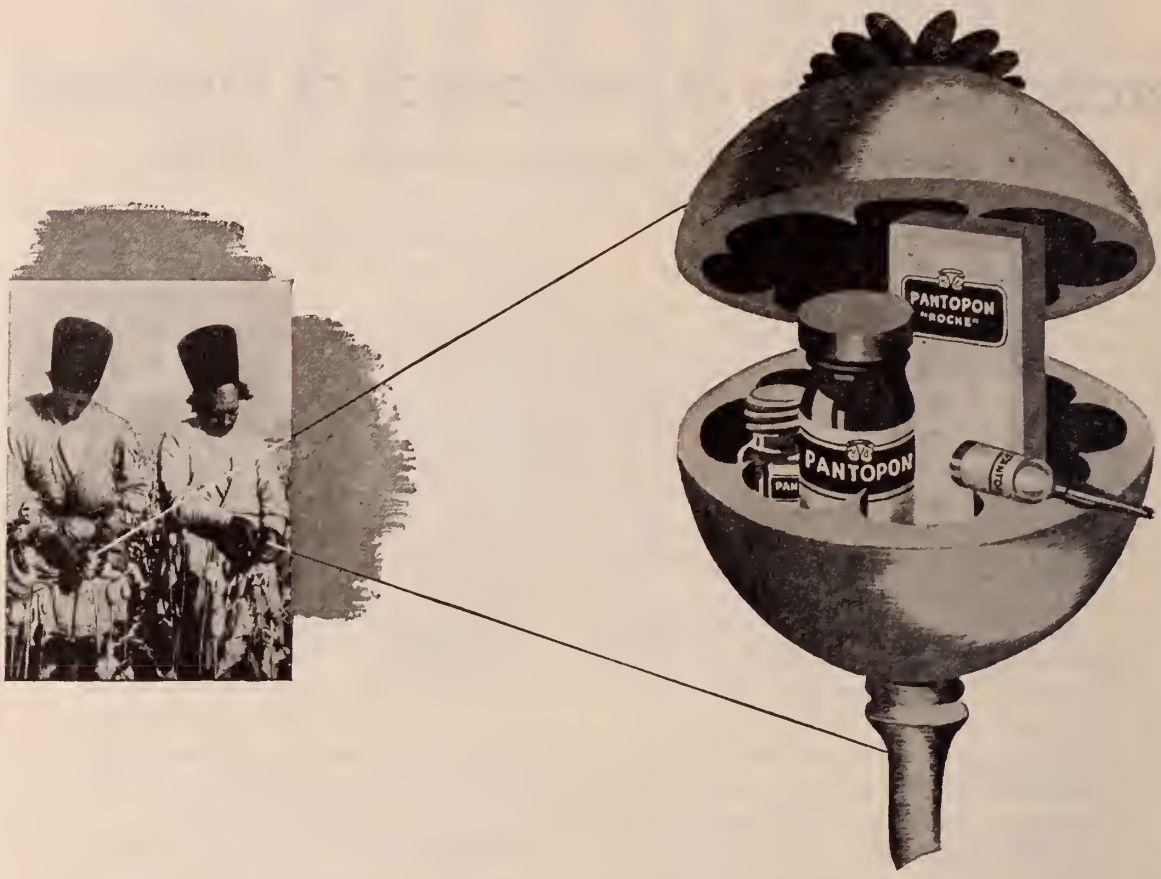
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1. 1938. J. A. M. A. 110, 1748.
2. 1938. Ibid. 111, 144.
1938. Ibid. 110, 2072.
3. 1938. Ibid. 111, 245.
4. 1937. U. S. D. A. Bur. of Home Econ., Misc. Pub. 275.
5. 1934-1935. Amer. Pub. Health Assn. Year Book 25, 69.

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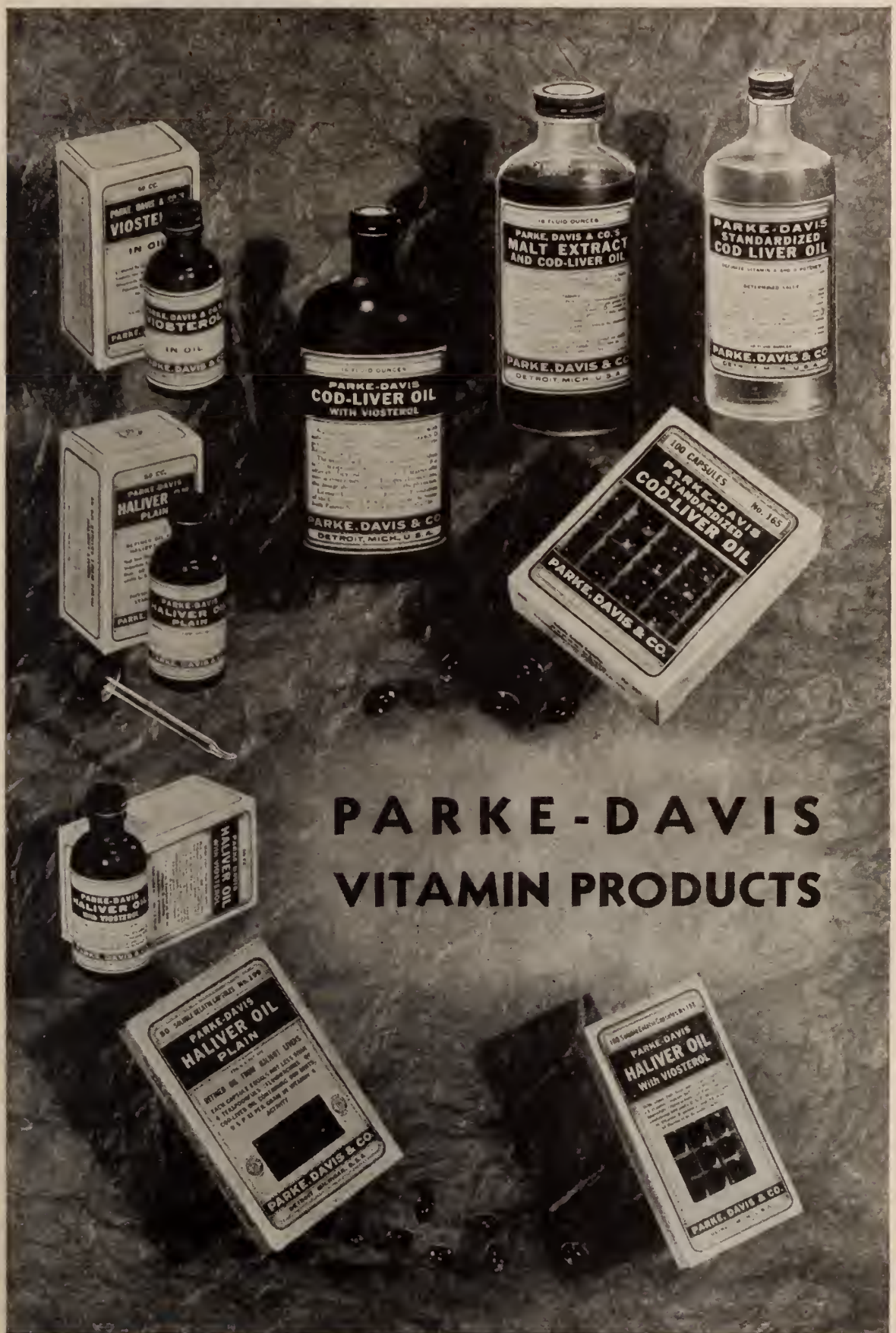
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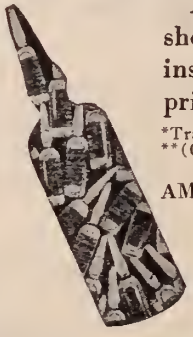
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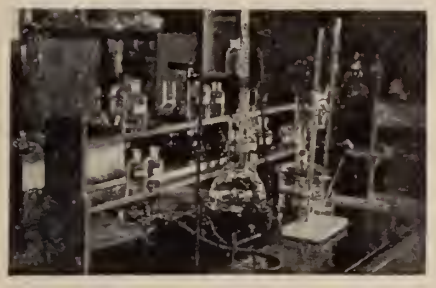




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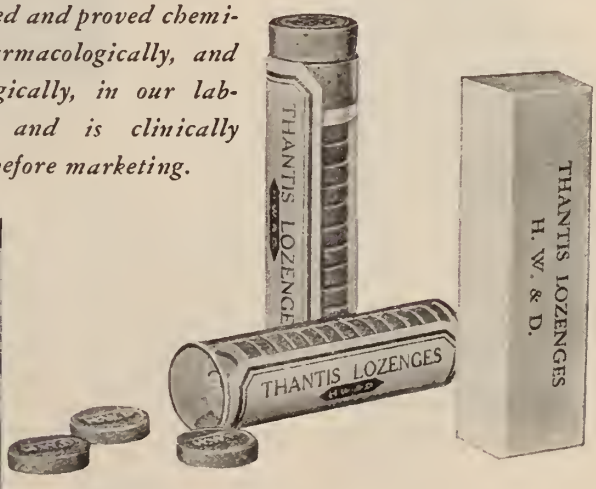
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Editorials

THE SPECIAL MEETING OF THE A. M. A. HOUSE OF DELEGATES

For the third time in ninety-one years, the A. M. A. legislative body or House of Delegates found it imperative to meet an impending crisis with a special or emergency session.

This was the third special session in the association's long life; the first occurring shortly after this nation's entrance into the World War in 1917, for the purpose of mobilizing and making immediately available to our fighting forces the medical talent and strength of the organized medical profession of the country; the second was held shortly after the passage of the Federal Social Security Act in 1935 which legislation made provisions for certain health and medical services on a nation's wide scale. These two, while important at the time they were held, cannot compare in importance with the third emergency session held in Chicago in September. The third Special meeting was the most remarkable ever held in the history of American Medicine.

Special sessions of the House are called when in the judgment of the Board of Trustees problems arise of such importance and serious import to the rank and file of the profession as to make immediate consideration by the association's policy making body urgently necessary.

Full report of the proceedings of this meeting was published in the Journal of the American Medical Association, September 24th, and should be read and digested by every doctor.

The emergency session of the House of Delegates came in response to a call from the Board of Trustees for the purpose of consideration of the National Health Program submitted to the National Health Congress.

The necessity for a call for a third special meeting of the House of Delegates, September 16-17, may not be apparent to the average reader without some consideration of preceding happenings in the National Capital. The first peg in the sequence of happenings at Washington was

passage of the Social Security legislation in 1935. Immediately after the bill became a law the President appointed a group to be known as the Inter-Departmental Committee to coordinate health and welfare activities. This committee had as its chairman Miss Josephine Roche. The committee established technical committees, among which were those on "recreation," "nutrition," "crime prevention and parole," and "medical care." The latter based most of its study on the survey completed last year by the United States Public Health Service. Report of the technical committee on medical care, titled "THE NEED FOR A NATIONAL HEALTH PROGRAM," was transmitted to the President last February but only a portion of it was made public at that time. It did, however, provide motive for calling a National Health Conference which was done by the Inter-Departmental committee July 18, 19 and 20, and it is the report of that conference which obliged the board of trustees of the American Medical Association to call the special meeting of the House of Delegates.

A complete and carefully written report of this National Health Conference will be found in the A. M. A. Journal, July 30.

One hundred and sixty-five of a possible one hundred and seventy-four delegates from all over the United States attended the two-day meeting. The House of Delegates constitutes the only body authorized to speak for the organized medical profession. The meeting was held for the purpose of drafting a policy based upon the National Health Program the outcome of deliberations of the National Health Conference which met in Washington July 18, 19 and 20 of this year.

Illinois was one hundred per cent represented at the special meeting of the House of Delegates with nine regular delegates and the delegate of the section on Pathology and Physiology.

At the Special meeting there were present not only the official delegates from the constituent state medical society, but officers of many of these, including editors of their respective State Journals. Other kindred professional organizations having representatives sitting in at the meetings were the Canadian Medical Association, the American Dental Association and the National Medical Association comprised of over five thousand negro physicians.

One of the most illuminating instances in connection with the Special meeting was the appearance of three representatives of the National Medical Association, an organization of more than 5,000 negro physicians who indicated that overtures had been made to them by Government officials, with a view of inducing that organization to put its ambitions in the hands of the Government. Notwithstanding these overtures, the National Medical Association, through its committee, expressed a wish to go forward with the American Medical Association as members of a great profession for the public service.

In May, 1938, it was announced that a conference would be called by the Federal Interdepartmental Committee to coordinate health and welfare activities. Dr. Olin West, secretary and manager of the American Medical Association, with the approval of the Board of Trustees, invited the chairman of that committee, Miss Josephine Roche, to meet with the house of delegates of the American Medical Association, at San Francisco. Miss Roche was not able to attend but her message was read by Dr. Warren F. Draper of the United States Public Health Service (A. M. A. Journal, July 2). In this message from Miss Roche to the House of Delegates, attention was called to the fact that the National Health Conference was suggested by President Roosevelt to urge the Inter-departmental Committee to invite representatives of the interested public and of the medical and other professions to examine the health problems and to discuss how to deal with them.

The National Health Conference met in Washington, D. C. in July. A technical committee on medical care to the inter-departmental committee to coordinate health and welfare activities made a report to the President on February 4, 1938 which included:

1—Preventive health services for the nation as a whole are grossly insufficient.

2—Hospital and other institutional facilities are inadequate in many communities, especially in rural areas, and financial support for hospital care and for professional services in hospitals is both insufficient and precarious, especially for services to people who cannot pay the costs of the care they need.

3—One third of the population, including persons with or without income, is receiving inadequate or no medical service.

4—An even larger fraction of the population suffers from economic burdens created by illness.

Five proposals submitted by the technical committee and which were to be acted upon by the House of Delegates fell into the following categories:

1—Compulsory sickness insurance with federal subsidy at an estimated over-all cost of $2,600,000,000 a year.

2—Expansion of general public health services, requiring an additional annual expenditure of $200,000,000.

3—Expansion of maternal and child health services requiring an additional expenditure of $165,000,000.

4—A hospital construction and partial maintenance program to construct 360,000 beds and 500 health and diagnostic centers requiring annual appropriation of $146,000,000.

5—Expansion of facilities for medical care of the medically needy to reach an annual appropriation of $400,000,000.

The preliminary session was devoted to addresses by the Speaker of House, the President and the President-elect of the association and the Chairman of the Board of Trustees. Following the addresses, many resolutions bearing on various phrases of present day problems were presented from the floor of the house as follows:

From a Michigan delegate came resolutions recommending conference to formulate working agreement or compensation for medical care.

From a New Jersey delegate come resolutions on distribution on Medical Care.

From a Tennessee delegate came resolutions recommending proposals for financing care of indigent sick.

From Pennsylvania delegate on resolutions on public announcement of plans recommended by House of Delegates.

From a Kentucky delegate a proposed substitute for title VI of the Social Security Act.

From Idaho delegate recommendations on appointment of special executive committee.

From West Virginia delegate, a plan for publicity against regimentation of physicians.

From Maryland delegate recommendation on cooperation for needed improvements in care of indigent.

From Kansas delegate, proposals concerning scope and methods of governmental participation in a National Health program.

From Missouri delegate, Missouri plan for medical care of all the people.

From Pennsylvania delegate recommendations from the medical society from the State of Pennsylvania.

From New Jersey delegate, plan from New Jersey for medical care of the indigent.

From New Jersey delegate, recommendations from the medical society of New Jersey.

From Mississippi delegate, resolutions on appointment of committee to study data and plans.

From New Jersey delegate, resolution on continuing conference with representatives of government and others.

From California delegate, resolution on change of medical care for the people.

From Minnesota delegate, statement from medical profession in Minnesota.

From Wisconsin delegate, resolutions requesting aid in finance or in service.

From Massachusetts delegate a request to define the term "medically needly" or "medically indigent."

Many of the resolutions introduced were voluminous in character. They were printed in detail in the Journal of the A. M. A. September 24.

Immediately following the addresses of the officers and the introduction of the numerous resolutions and recommendations a committee of twenty-five leaders in organized medicine in the United States was appointed on reference committees on all matters to be presented. This committee of twenty-five divided into five smaller committees, each charged with formulating a report on the five sections of recommendations of the inter-departmental committee to coordinate health and welfare activities appointed by the President of the United States, which subcommittees, upon completion of their task, were to sit jointly and frame an amalgamated report for consideration of the House as a whole.

After adjournment of the first day's forenoon session and extending far into the night, and a portion of the second day were given over to committee hearings and discussions, during which time interested delegates appeared before them and presented informally and frankly their views and suggestions. Unstinted praise should

be given to the members of these reference committees for the thorough and painstaking manner in which they assembled and analysed the mass of evidence and materials submitted to them. The finished product of their labours and as finally submitted to the House, sitting as a whole, each section of the report, seriatim, was carefully considered and acted upon; the final report, is as follows:

REPORT OF REFERENCE COMMITTEE ON NATIONAL HEALTH PROGRAM

Since it is evident that the physicians of this nation, as represented by the members of this House of Delegates convened in special session, favor definite and decisive action now, your committee submits the following for your approval:

1. Under Recommendation I on Expansion of Public Health Services: (1) Your committee recommends the establishment of a federal department of health with a secretary who shall be a doctor of medicine and a member of the President's cabinet. (2) The general principles outlined by the Technical Committee for the expansion of Public Health and Maternal and Child Health Services are approved and the American Medical Association definitely seeks to coöperate in developing efficient and economical ways and means of putting into effect this recommendation. (3) Any expenditures made for the expansion of public health and maternal and child health services should not include the treatment of disease except so far as this cannot be successfully accomplished through the private practitioner.

2. Under Recommendation II on Expansion of Hospital Facilities: Your committee favors the expansion of general hospital facilities where need exists. The hospital situation would indicate that there is at present greater need for the use of existing hospital facilities than for additional hospitals.

Your committee heartily recommends the approval of the recommendation of the technical committee stressing the use of existing hospital facilities. The stability and efficiency of many existing church and voluntary hospitals could be assured by the payment to them of the costs of the necessary hospitalization of the medically indigent.

3. Under Recommendation III on Medical Care for the Medically Needy: Your committee advocates recognition of the principle that the complete medical care of the indigent is a responsibility of the community, medical and allied professions and that such care should be organized by local governmental units and supported by tax funds.

Since the indigent now constitute a large group in the population your committee recognizes that the necessity for state aid for medical care may arise in poorer communities and the federal government may need to provide funds when the state is unable to meet these emergencies.

Reports of the Bureau of the Census, of the U. S. Public Health Service and of life insurance companies show that great progress has been made in the United States in the reduction of morbidity and mortality among all classes of people. This reflects the good quality of medical care now provided. Your committee wishes to see continued and improved the methods and practices which have brought us to this present high plane.

Your committee wishes to see established well coördinated programs in the various states in the nation, for improvement of food, housing and the other environmental conditions which have the greatest influence on the health of our citizens. Your committee wishes also to see established a definite and far-reaching public health program for the education and information of all the people in order that they may take advantage of the present medical service available in this country.

In the face of the vanishing support of philanthropy, the medical profession as a whole will welcome the appropriation of funds to provide medical care for the medically needy, provided, first, that the public welfare administrative procedures are simplified and coördinated; and, second, that the provision of medical services is arranged by responsible local public officials in coöperation with the local medical profession and its allied groups.

Your committee feels that in each state a system should be developed to meet the recommendation of the National Health Conference in conformity with its suggestion that "the role of the federal government should be principally that of giving financial and technical aid to the states in their development of sound programs through procedures largely of their own choice."

4. Under Recommendation IV on a General Program of Medical Care: Your committee approves the principle of hospital service insurance which is being widely adopted throughout the country. It is susceptible of great expansion along sound lines, and your committee particularly recommends it as a community project. Experience in the operation of hospital service insurance or group hospitalization plans has demonstrated that these plans should confine themselves to provision of hospital facilities and should not include any type of medical care.

Your committee recognizes that health needs and means to supply such needs vary throughout the United States. Studies indicate that health needs are not identical in different localities but that they usually depend on local conditions and therefore are primarily local problems. Your committee therefore encourages county or district medical societies, with the approval of the state medical society of which each is a component part, to develop appropriate means to meet their local requirements.

In addition to insurance for hospitalization we believe it is practicable to develop cash indemnity insurance plans to cover, in whole or in part, the costs of emergency or prolonged illness. Agencies set up to provide such insurance should comply with state statutes and regulations to insure their soundness and financial responsibility and have the approval of the

county and state medical societies under which they operate.

Your committee is not willing to foster any system of compulsory health insurance. Your committee is convinced that it is a complicated, bureaucratic system which has no place in a democratic state. It would undoubtedly set up a far-reaching tax system with great increase in the cost of government. That it would lend itself to political control and manipulation there is no doubt.

Your committee recognizes the soundness of the principles of workmen's compensation laws and recommends the expansion of such legislation to provide for meeting the costs of illness sustained as a result of employment in industry.

Your committee repeats its conviction that voluntary indemnity insurance may assist many income groups to finance their sickness costs without subsidy. Further development of group hospitalization and establishment of insurance plans on the indemnity principle to cover the cost of illness will assist in solution of these problems.

5. Under Recommendation V on Insurance Against Loss of Wages During Sickness: In essence, the recommendation deals with compensation of loss of wages during sickness. Your committee unreservedly endorses this principle as it has distinct influence toward recovery and tends to reduce permanent disability. It is, however, in the interest of good medical care that the attending physician be relieved of the duty of certification of illness and of recovery, which function should be performed by a qualified medical employee of the disbursing agency.

6. To facilitate the accomplishment of these objectives, your committee recommends that a committee of not more than seven physicians representative of the practicing profession, under the chairmanship of Dr. Irvin Abell, President of the American Medical Association, be appointed by the Speaker to confer and consult with the proper federal representatives to the proposed National Health Program.

The term MEDICAL INDIGENT defined. After much debate the phrase "MEDICAL NEEDY" or "MEDICAL INDIGENT" was defined by the members of the House of Delegates in the following language:

"A person is medically indigent when he is unable, in the place in which he resides, through his own resources, to provide himself and his dependents with proper medical, dental, nursing, hospital, pharmaceutical and therapeutic appliance care without depriving himself or his dependents of necessary food, clothing, shelter and similar necessities of life, as determined by the local authority charged with the duty of dispensing relief for the medically indigent."

The Board of Trustees presented to the House of Delegates the statement concerning the proposed investigation by the Department of Justice, which seeks to obtain an indictment of the American Medical Association as a monopoly. The statement has been made repeatedly that the American Medical Association is ready for investigation by any authorized agency, firmly reliant in the belief that its actions are in accordance with its constitutional organization, that they have been taken in the interest of the public health and welfare, and that it has never violated the established laws of this country. The House of Delegates expressed its firm conviction in the truth of these statements and urged the Board of Trustees to oppose with its utmost power, even to the courts of last resort, this apparent attempt to convict the American Medical Association in the eyes of the people of being a predatory, antisocial monopoly.

Although the House of Delegates showed through all its deliberations a desire to co-operate with the government agencies in the wise expenditure of funds for the medical care of the needy, it does not recognize the need for a yearly appropriation of $850,000,000 as recommended by the President's committee.

The House of Delegates reiterated their strenuous disapproval of compulsory state controlled health insurance in no unmistakable language as follows:

"Your Committee is not willing to foster any system of compulsory health insurance. Your Committe is convinced that it is a complicated, bureaucratic system which has no place in a democratic state. It would undoubtedly set up a far-reaching tax system with great increase in the cost of government. That it would lend itself to political control and manipulation there is no doubt."

The House of Delegates again recommeded the establishment of a federal department of health to consolidate the twenty-seven different public health activities of the government, with a secretary who shall be a doctor of medicine and a cabinet member. They also approved the expansion of Public Health and Maternal and Child Health activities along prevention lines only, and with due regard to economy.

Approved after heated discussion was government appropriations, but only on condition that the medical profession direct the expenditure. The governments plan for hospital aid

was accepted only funds would be used to improve existing conditions.

Objections for the insurance plan revolved about the ensuing tax system, political control and manipulation.

A delegation of seven physicians, headed by A. M. A. president Dr. Irvin Abell was selected to discuss the results of the meeting with federal representatives.

The meeting of the House of Delegates had a most wholesome effect in allaying doubts and fears among the medical profession as to the position of the American Medical Association in relationship to recent propaganda that has been widely circulated in this country. The unanimity of expression and action again indicated that these representatives of 110,000 American physicians are able as a democratic body to express the wishes of the vast majority of the medical profession in this country and to speak with one voice for them.

The final action of the House of Delegates fairly cover the entire problem of medical care as it is now conceived, and provide the answer of the membership of the American Medical Association to all questions about its current policy. With that report as a guide every physician may firmly defend the stand of organized medicine whenever or in whatever way it may be attacked.

AMERICAN HOSPITAL ASSOCIATION ESTABLISHES PRINCIPLES FOR MEDICAL SERVICE

We quote the following from the Jour. A.M.A. Oct. 15, 1938.

At the annual session of the American Hospital Association recently held in Dallas, Texas, the following memorandum was prepared by the board of trustees of that organization and submitted to its house of delegates, which approved both the preamble and the conclusions.

Concerning the Principles of Relationship Between Approved Hospital Service Associations and the Medical Profession in Proposals to Provide Medical Service on an Insurance Basis to Hospital Patients of Limited Income

With more than 2,000,000 subscribers enrolled, and with membership increasing at the rate of more than one million per year, hospital service plans approved by the American Hospital Association are not only helping patients to pay their hospital bills, but are also contributing indirectly to the preservation of private medical practice in hospitals.

The prevalent restriction of these plans to semiprivate hospital service, and the omission of any provision for physicians' fees in hospital cases, have placed non-profit hospital care insurance beyond the reach of many employed workers of limited income.

There is a strong demand on the part of these low income groups for the creation of hospital service plans adapted to their means. Medical societies are now studying, and in some cases are preparing to sponsor, group payment plans to cover medical fees of patients of limited means. If these efforts are successful, they will reclaim for private medical practice a segment of medical service in hospitals even larger than that which is protected by existing hospital care insurance plans.

The American Hospital Association believes that efforts by the local medical profession to extend the voluntary insurance principles to medical fees in hospital practice can be assisted by cooperation with approved hospital care insurance plans. Approved plans are urged to offer their cooperation and assistance to this end. Joint efforts will make hospital care available to millions of persons of limited means, who in this manner would pay for both hospital care and medical treatment in hospitals.

The American Hospital Association is prepared to approve periodic payment plans for hospital care and medical service in hospitals which are also approved by the local medical profession and which conform to the following principles:

1. Sponsorship and control by non-profit organizations, representative of hospitals, the medical profession, and the public.
2. Free choice of physician and free choice of hospital consistent with existing relations between approved hospitals and their physicians.
3. Financial soundness and adequate accounting.
4. Equitable payments to physicians and to hospitals.
5. Separate finances and reserves for hospital care and for medical services of attending physicians.

6. Hospital and medical service benefits determined by hospitals and the local profession.

7. Dignified promotion and administration.

The American Medical Association is invited to confer with the American Hospital Association regarding these and related problems with a view to harmonious joint action in the public interest.

Thus the American Hospital Association indicates a willingness to cooperate with the American Medical Association with a view to harmonious joint action in the public interest. It recognizes the right of the physician to control the terms of his service. It recognizes the free choice of physician and free choice of hospital as fundamental to good medical care. It supports the established action of the House of Delegates of the American Medical Association in maintaining separate finances and reserves for hospital care and for the service of the physician.

It is encouraging to have such a statement from the leaders in the field of the hospital, since the hospital is today a center of medical service. The action taken by both the American Medical Association and the American Hospital Association now permits the establishment of cooperative plans for group payment for medical service without invalidating any of those ideals or principles associated with medical care which are vital to the provision of good medical service.

HOW MUCH DOES GOVERNMENT COST US?

Harry Scherman, author of "The Promises Men Live By" in the *New York Herald-Tribune,* 1938, outlines a comparison of taxes in this and other countries.

TAXES COMPARED

The British are generally considered the most heavily taxed people in the world, and it is usually Great Britain that is referred to, when it is assumed the American taxpayer is so well off, What do the comparative figures show?

For the year ending March 31, 1938, national taxes collected in the United Kingdom were around £841,000,000 To this must be added £176,000,000 for local taxes, a close estimate based upon the latest published figures. Counting the pound at $4.95, and the population at 47,000,000, this comes to about $107 per person in the United Kingdom.

As to the United States, total local, State and Federal taxes collected for the fiscal year ending in 1938, look now as if they will be in the close neighborhood of $13,700,000,000, according to computations of the National Industrial Conference Board and budget estimates. With our population at 128,000,000, this is also, very interestingly, $107 per person in the population!

Thus, we have finally managed to pull abreast of Great Britain in the amount of taxes collected per capita. But this is giving ourselves a colossal break. How about the taxes we defer by means of loans? Great Britain's national debt has increased only £343,000,000 since 1930, whereas our federal debt has increased $21,000,000,000 in the same period!

THE REAL COST OF GOVERNMENT

In short, it is an absurd and egregious error to count mere taxes collected a measure of the cost of government, *if not enough are collected to pay the current costs,* and when the balance is obtained by borrowings which can only be met in one way—by the collection of increased taxes later!

When a government adopts a deliberate policy of deficit-financing (as ours has done upon the advice of an Englishman, Mr. Keynes, whose ideas the British themselves have ignored) taxes collected are not merely misleading—they are simply no measure at all of what government is costing the people affected. The only true measure of what government costs any people is the money the government *actually spends* in carrying on its chosen activities.

From this necessary criterion, what does government cost in the United States, as compared with other nations?

WE LEAD THE WORLD

Some authoritative light on this subject can be found in a study made by The Twentieth Century Fund, the results of which were published in 1937, under the title of *The National Debt and Government Credit.* In one of its chapters it compared the government expenditures of Great Britain, France and the United States. Both central and local government expense were included.

The result was as follows for 1936, the latest

year for which authoritative figures from the governments were then available:

United States:	$133 per person
Great Britain:	123 per person
France:	103 per person

This, then, is the true picture of the situation: as to actual wealth currently taken from us in taxes, we march in advance of all nations alongside Great Britain; and as to the more essential matter, the real cost of government, we outstrip all other nations.

CAUSE OF THE ERROR

This prevalent notion that Americans are better off, tax-wise, than other benighted peoples seems to have become part of a fixed national pattern of thought about this matter of government expense. The perniciousness of the error seems obvious.

The source of it is easily traced. It mainly arises from our traditional and vicious reliance for revenue principally upon indirect taxation. The taxes our commentators and public officials seem to keep most in mind are the personal income taxes. But the true status of the personal income tax, in the whole fiscal picture, is revealed by some interesting figures. As stated above, total taxes collected this fiscal year will be close to $13,700,000,000. Only about $1,500,000,000 of this—only about one-ninth of it!—will consist of federal and state personal income taxes.

There surely, is the main reason for the prevalent notion that we are a lightly-taxed people. As to *eight-ninths* of the taxes we pay, few of us are ever conscious of them. Individually, we are so innocent in this matter of government finance, that we do not even know we are being frisked; and much less, how.

HOW MUCH IT COSTS YOU

The common equanimity under this state of affairs would, of course, be quickly dispelled, were it possible to bring home the actual burden of government expense each one of us, unwittingly, carries. This perhaps can best be appreciated by considering the cost of government, not per capita but per family. After all, most of us live our economic lives as families, not per capita.

There are now roughly about 31,500,000 families in the United States. A close estimate of total government expense in the current fiscal year would be $16,500,000,000, according to figures compiled by the National Industrial Conference Board. This is an average expense for government, in the United States, of $523 *per family!*

This is a tidy sum for any family to pay out, without knowing about it! When the new pump-priming expenditures go into effect in the coming fiscal year, it will of course be much higher.

It would be fatal to assume that your family does not pay this amount, because your personal income tax is small; or even if you pay none. The families in the United States that have the lowest cash-income are rural, particularly share-croppers. Because of the millions of these very low cash-income families, all others must pay more than the average to make it come out at $523.

Thus, if you are a wage or salary earner, no matter how small the family income you enjoy, it may be taken as almost certain that that income is $523 smaller—and perhaps smaller by a great deal more—because of the contributions, unknown to you that you have been making to the support of federal state and local government.

CHARITY NOT TO BLAME

Relief is often presented as the political excuse for this enormous load of government expense. The query, "Would you let people starve?" is supposed to stop the mouths of informed persons, who have become concerned about government improvidence; and too often it does.

But men and women of good will need not feel conscience-stricken when they call for government economy, if they will bear a simple fact of mind: only $90 out of this $523 in the present fiscal year will represent relief, both state and federal. Whether or not one questions any single aspect of this policy of government relief, *if every penny of it were eliminated,* we would still stagger under a load of $433 per family for government expense!

Moreover, it is helpful to remember that no starvation has been reported in lands like Canada, Great Britain, France, Sweden, Norway, Switzerland, Holland, Belgium, and many others that might be cited. These nations may only

"pretend to be up to date," but somehow they seem to be able to achieve the same happy result as we, at considerably lower cost.

THE JEWEL OF INCONSISTENCY

The editor of *Nation's Business,* October, 1938, has the following to offer relative to the threat to prosecute the American Medical Association. Under the heading "The Jewel of Inconsistency" he says:

NOW comes Assistant Attorney General Thurman Arnold with a threat to prosecute the American Medical Association as a violator of the Sherman Antitrust Law, The Association has dared boldly to oppose a Washington group health organization set up for federal employees with federal funds, because they see in it the spearhead of state medicine.

This would set a precedent which the debunker of capitalistic folk-lore might regret. We suggest that he read again that paragraph in his newspaper blast branding with his disapproval:

An attempt on the part of one group of physicians to prevent qualified doctors from carrying on their calling and to prevent members of the Group Health Association from selecting physicians of their choice. The department interprets the law as prohibiting combinations which prevent others from competing for services as well as goods.

Doctors can show that the allegation is fanciful. But granting that he could prove it, how could he avoid taking parallel action against labor organizations—perhaps the C.I.O. itself. That would be bad for Mr. Arnold. In the statement just quoted substitute "union leaders" for "physicians," "workmen" for "doctors," and "independent unions" for "Group Health Association." It would then read not so badly:

. . . an attempt on the part of one group of union leaders to prevent qualified workmen from carrying on their calling and to prevent members of independent unions from selecting leaders of their choice.

THE HIGH COST OF WITCH-HUNTING

Merle Thorpe in *"Nation's Business,"* October, comments as follows:

Every American worth his salt wants to see the nation restored to the full vigor of economic health. By every rating, business activity is the country's first need.

Business men have their work cut out for them; Government has a job to do. Both must pull together for better times.

Unfortunately, statesmanship too frequently gives way to politics. When politics is played, politics must be paid.

The frank politician will tell you that the way to hold the "customers" is to keep an "issue" alive and to have another ready in case the current one becomes stale. A political issue involves the correction of a condition supposed to be hurtful to the greatest number of voters the successful pleading of one's remedy to bring him place and preferment. Issues cover a wide field —for example, the cost of a kilowatt, price parities, the sixty families, Wall Street, wage bondage.

Politics feels it must continually hunt for new witches, must keep the cauldron boiling. The last witch of the desperate ruler, as every student of history knows, is a foreign "aggressor," with war the remedy.

The productive powers of the people were never so taxed as now in witch-hunting, witch-policing, and witch-hanging.

Politics submits today the biggest bill ever rendered the people of the United States. Itemized, it covers so many alleged remedies of newly found witchcraft that it constitutes a completely new concept of the federal authority. More than 100 new boards commissions, bureaus, authorities and corporations have been set up since the beginning of the depression and indicate with the huge sums the people have provided for implementing them, the number of witches our restless medicine-makers have discovered.

The city of Washington has expanded its simple role of law-maker, arbiter and protector to a protean character of indulgent father. The sovereign people are its wards, to be protected against all the ills that human flesh is heir to. Its prescriptions for a myriad maladies run the gamut from minor regulation of their affairs through supervision, control, and out-and-out competition with them. And the end is not yet. Despite the "deplorable conditions" found so far in practically every activity of American life, our valiant hunters have a thousand witches in reserve ready to be trotted out demanding more federal activities—and expense.

Expense? Ah, there's a real enemy of the

public, neither hobgoblin nor Hallowe'en pumpkin!

The expense of policing the citizen is a charge against his labor, although he seldom realizes it. The witch doctors provide no free shows, no bounties, no subsidies, no services, no aids no publications, no guidance, no culture, without its price. The price tag is hidden, but it is there. The bill comes home directly and indirectly to every man, woman and child whose lot is cast in this land.

As sure as death is the tax money to keep our growing government personnel in the style to which it is becoming accustomed—a style to which no real citizen aspires and which none can afford. This money represents work, "is paid for in the sweat of every man who labors." It comes from earnings which alone can provide a useful job to the man out of work, and promotion in position and pay to those now employed.

The levy upon this fund which represents sacrifice and savings can be made for jobs to produce electric toasters and automobiles or it can be made for more and bigger witch-hunting. The decision is with the millions of men and women who work and earn and save. Will they stop dancing to political swing music long enough to consider thoughtfully and decide whether they want more of the material conveniences and luxuries of life or more of the extravagant hunting and policing that consumes their hard-won substance in chasing political phantoms?

A country famed the world over for the solid reality of its contributions to the well-being of mankind is incredibly out of character in tilting with shadows. Broomsticks are out of fashion as saddles for witches. They can be put to much better use in cleaning political attics of mental cobwebs.

COMPULSORY HEALTH INSURANCE WOULD ADD ENORMOUS EXPENSE TO AN ALREADY TAX BURDENED PEOPLE

Dr. John R. Neal, chairman of the Legislative Committee of the Illinois State Medical Society, in his pre-election letter to prospective candidates for the legislature gave the candidates the following educational information:

Although apparently not much of an issue in the election campaign compulsory health insurance will almost certainly come before the next Congress of the United States in the form of a bill. You know, of course, that the physicians of Illinois, in common with those of the Nation generally, are deeply interested in this probability. I am very confident that I speak for an overwhelming majority of the medical profession of the State when I say that they are unreservedly opposed to compulsory health insurance in any form.

The United States is now, I believe, the only great nation that does not have compulsory health insurance in one form or another and we ought to be proud of it. Life is substantially longer, on the average, the general death rate and infant mortality are considerably lower the preventable contagious diseases are far less prevalent (with the possible exception of syphilis and an effective program has been launched against it) and prevailing health is much more favorable in the United States than in any other World Power. These advantages, which have been gained through the American system, may be verified by League of Nations records.

Compulsory health insurance would add enormous expense to an already tax burdened people, it would set up machinery susceptible of employment in *Fascism* and would *not* provide, as experience elsewhere has demonstrated, any significantly better medical care to the needy than they now enjoy. Certainly Illinois has no problem that socialized medicine would solve.

The medical profession has initiated and supported all of the significant public health programs in this country which have accomplished so much heretofore and the profession concurs heartily in the proposals of the President's Inter-Departmental Committee to Coordinate Health and Welfare Activities except the proposition of compulsory health insurance.

FULL CITIZENSHIP REQUIREMENT FOR LICENSURE

The House of Delegates of the American Medical Association at the San Francisco meeting approved a resolution to be submitted to the Federation of State Medical Boards and to the officers of each examining board of the United States with the request to consider seriously the

urgent need for adoption of such rules and for legislation necessary for the additional licensure requirement of full citizenship of foreign medical graduates.

It is hoped that all state boards will give this important matter serious consideration and advise the Federation office of any action taken so as to guide the Federation in preparing for the official consideration at the next annual session in February, 1939.

The resolution states in full:

WHEREAS, The license to practice medicine and surgery in many countries is limited strictly to citizens of these countries; and

WHEREAS, In addition to holding full citizenship, each applicant is required in several of these countries to show that his medical education was pursued and completed in said countries; and

WHEREAS, Many foreign graduates in medicine and surgery in increasing numbers are seeking admittance to the practice of medicine in these United States; and

WHEREAS, In order to convey adequately to these applicants a full and satisfactory knowledge of the American conception of patriotism and of ethical ideals in medicine, it is necessary that a period of residence be required; therefore be it

Resolved, That in addition to the requirements for foreign graduates, as outlined in a resolution adopted by the House of Delegates for the American Medical Association in 1936, it is highly desirable that an additional requirement of full citizenship in the United States of America be demanded; and be it further

Resolved, That the House of Delegates of the American Medical Association approve the foregoing and that a copy be sent to the properly constituted officers of each examining board of the United States and to the Federation of State Medical Boards, with the request that they consider seriously urgent need for the adoption of such rules and/or legislation necessary to put the purpose of these resolutions into effect.

COD LIVER OIL TREATMENT OF INDOLENT ULCERS

Drs. Driver, Binkley and Sullivan in Urological and Cutaneous Review, August, 1938, says:

After experimenting with various formulas for application to indolent ulcers, this one was found to be satisfactory:

Commercial cod-liver oil	88 percent
White wax	12 percent

The wax base prevents too-rapid absorption of the oil in the dressings, and when the dressing is removed, it usually clings to the dressing, thus making it possible to prevent traumatizing the granulating surface.

A generous amount of the ointment, usually one-fourth inch in thickness, is spread on gauze or muslin, then covered with oiled silk or oiled paper and bandaged in place. A warm, moist chamber about the ulcer is thus produced.

Following the first application, a marked activity is generally set up, resulting in an increased secretion of pus and serum. The ulcer soon assumes a ruddy, clean, healthy appearance and new epithelium can be seen growing in from the margins. The dressings should now be changed less frequently (4 or 5 day intervals), and extreme care must be used to avoid trauma, by wiping with cotton or gauze. The surrounding skin, if contaminated by secretions, should be carefully cleansed with soap and water, in order to prevent an infectious dermatitis.

The effect of the treatment is most striking in certain large, indolent, varicose ulcers. Overstimulation of granulation tissue may necessitate cauterization with silver nitrate or clipping them level with the surface.

GASTRODUODENOSTOMY FOR CERTAIN DUODENAL ULCERS

Howard M. Clute and John S. Sprague, Boston (*Journal A. M. A.,* Sept. 3, 1938), urge that gastroduodenostomy be given more consideration when surgical treatment is necessary in the management of certain duodenal ulcers. Although opinions and experiences as to the occurrence of stomal ulcers after gastroduodenostomy differ widely, they have been unable to discover evidence of a high percentage of these postoperative complications. They believe that gastroduodenostomy results in a nearer approach to normal gastric physiology than other short-circuiting operations. They discuss the technic and present the results that they obtained following gastroduodenostomy in seven cases of pyloric stenosis, in two cases of persistent pain from duodenal ulcer in spite of long medical treatment, two cases of duodenal ulcer with serious hemorrhages, two cases of ulcer high on the lesser curvature of the stomach and two bleeding gastrojejunal ulcers.

POSTURAL TREATMENT OF COLIC

The colic of infants before the age of three months is usually accompanied by considerable gas in the small intestine. I placed such infants in the semi-inclined, right lateral and abdominal positions, so that the gas would rise to the cardiac end of the stomach, and found that the colic did not return.

Fifty infants were examined roentgenologically in the recumbent position during the first week of life, and half of this number showed gas in the small intestine. Twenty-five were then placed in a semi-inclined position, so that the esophagus was on a higher plane than the pylorus, and in 22 the gas in the small intestine disappeared.—WILLIAM SNOW, M.D., in *Am. J. Roentgen. & Rad. Ther.,* Nov. 1937.

DO YOU KNOW—

That scarlet fever is now being prevented by inoculation and that vaccination against whooping cough is apparently effective? Do you know that measles can be controlled to a considerable degree through the use of convalescent or whole blood given to susceptible persons after exposure to the disease?

MEDICAL ECONOMICS

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E. P. Coleman, M. D.
W. M. Hartman, M. D.
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Edited by the Committee on Medical Economics
of the
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Kankakee, Illinois

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The response of the medical profession of Illinois to the suggestion in this column the last two months has been both interesting and gratifying. Interesting because of the fact that there was not 100% agreement with the idea of the medical profession getting in touch with the candidates and endeavoring to get an expression of opinion from them. Those, who doubted the advisability of such a procedure and it is the opinion of the writer that they comprise a very small percentage of the profession, contended that the candidates would not be willing to give a statement as to their stand on the question of STATE MEDICINE and if they did it would be of no value. Those of you who are on Dr. John Neals mailing list, have been receiving almost daily reminders of the cooperation of the candidates and their desire to let the medical profession know their position in the matter. And let us here give credit to the admirable manner in which the obtaining of opinions was performed as well as the general distribution of the information by the efficient Chairman of the Legislative Committee of the Illinois State Medical Society, Dr. John Neal, assisted by his office.

On the day this is written, one week before the election, the writer was approached by a representative of one of the candidates for United States Senator from Illinois. This representative wanted the writer to know that the candidate had been astounded by the interest of the medical profession in regard to his stand on STATE MEDICINE and was considering the advisability of contacting all the members of the Illinois State Medical Society before election with a definite statement of his opposition. This to the writer seems definite proof that something can be done by the medical profession in an ethical and professional manner to help elect the proper men to the Senate and House of Representatives. Even though we cannot rely on preelection promises all the time, it is much easier to vote in accordance with written preelection promises than it is to ignore them. And it may be better politics.

The response of the medical profession as well as the candidates in helping to bring the question of STATE MEDICINE before the public and the candidates and to let the public know exactly how the medical profession stand on this subject has been most gratifying to the writer of this column, who has been talking this idea for many years, but never felt the time was ripe to present it to the medical profession for adoption until this year.

By the time this issue of the Illinois Medical Journal is in the hands of the physicians of the State, the election will be over and all will know who the new Senator, Member of the House of Representatives from his District, and the two members at large are to be for the coming few years. These men should be contacted again and the stand of the medical profession kept fresh in their minds. Every medical man should avail himself of every opportunity to contact his Senator and Representative and he might even make a few opportunities. There is work for every physician in Illinois if we are to have the active support of our elected agent in Congress. Do not expect The President and Secretary of the Society to do all the work for you.

During the excitement of election campaign, the news about what is going on behind the scenes at the national capitol has been scant. However, the campaign in favor of STATE MEDICINE has been going on. The October 24, 1938 issue of THE UNITED STATES NEWS published an article headed "GROUP MEDICINE: A TEST UNDER WAY." In this article the statement is made that "Thruman W. Arnold, Assistant Attorney General of the Department of Justice in charge of anti-trust prosecution, is presenting evidence to the Grand Jury in an effort to obtain a criminal

indictment against the American Medical Association—estimated to represent two thirds of the physicians in the United States—and the District of Columbia Medical Society for alleged 'coercive' action against the Group Hospital Association, Inc., Government employees medical cooperative." The writer has not seen this information in any of the metropolitan newspapers that come to his attention, but the information contained in this article proves conclusively that the scare headlines across the top of all the Sunday Papers of the Country last summer were not an idle threat, but that there is a real attempt to intimidate the medical profession into at least passive submission to the experiments at Washington. A little further in the article the statement is made. "For the immediate future the matter of most concern is the outcome of the grand jury investigation, which will determine whether the Washington G. H. A. is to be permitted to serve as a sort of guinea pig to determine the feasibility of medical cooperatives and whether similar cooperatives are to be permitted to develop elsewhere." Surely here is food for thought as to the plans under way for the medical profession.

The Chicago Tribune of October 27, 1938 in reporting an address at Kansas City by Arthur J. Altmeyer, Chairman of the social security board said "Arthur J. Altmeyer, Chairman of the social security board, declared today that the national medical care program proposed recently by a federal committee will cost only $10 or less a person yearly in NEW taxation." The writer was never an expert at mathematics, but according to his calculations this would amount to 130,000,000 multiplied by 10, which would make $1,300,000,000 a year of NEW TAXES. He also feels that in these days of big figures, that part of the statement quoted which says OR LESS may as well be ignored. While the final figures would probably be much higher than the present estimate, even if it was no higher than the estimate, that amount of a billion and one third dollars seems a large amount to add to the already high taxes, which are even now with the opening of Congress two months off being threatened with a marked increase.

The lay press continues to give considerable attention to the medical profession. The latest article to blister the medical profession appeared in LIBERTY of October 1938. Of course such an article was not unexpected, but it certainly was extremely unfavorable to the medical profession and is an excellent example of the kind of propaganda now in use. We suggest that all the medical profession read the article and after that let their conscience be their guide as to how much to believe that they read and as to the proper place for LIBERTY.

We are almost ready to promise no more political editorials. However, we make no apology for our interest up to this time and regardless of whether the new Senator from Illinois is a Democrat or a Republican we feel that the medical profession is in better position to keep in contact with him than ever before and should have no hesitancy in asking his support in any legislation which is proposed affecting the medical profession.

E. S. Hamilton, Chairman,
Committee Medical Economics.

Correspondence

MAGAZINE "KEN" TAKEN TO TASK

October 17, 1938.

To the Editor:

In the October issue of KEN, on pages 61 and 63, there is an article entitled MONEY OR MEDICINE which I think is one of the most unfair statements I ever saw of the present contentions between communism, socialism and the American method of medical practice. It was written, as you will see, by Harry Keelan and follows the communistic practice of ridiculing things that cannot from their standpoint be treated seriously and honestly.

Your editorial in the current month's issue and its quotations from Gustav Hartz is one of the most effective and convincing statements that I have seen in support of the maintenance of our present system of private practice.

A letter from the editor of KEN, Mr. Arnold Gingrich, under date of October 12, lauding the enterprise of the paper, doubtless with view to getting advertising or subscriptions, has been replied to as shown by attached carbon.

Probably you saw an article in the Chicago Tribune of October 14 under the title NEW STEP TAKEN TO PUT MEDICINE UNDER U. S. RULE, which describes a set-up

of a medical loan fund for the families on relief in the Dakotas. It is insiduous and is designed to accomplish by indirection what cannot be accomplished under the law directly. It is another instance of the danger to our American institutions in handing great sums of money over to bureaus for use at their discretion, especially when these bureaus are so dominated by officials who entertain un-American ideas and hold the governments of Russia, Germany, and Italy up as ideals.

JOHN S. WRIGHT.

Mr. Wright's letter to "Ken" follows:

October 20, 1938

Mr. Arnold Gingrich, Editor "KEN"
919 North Michigan Avenue
Chicago, Illinois

Dear Mr. Gingrich:

Replying to your letter of October 12 regarding KEN, I have read sample copies and found them very interesting. I regretted to see in the issue of October 20, pages 61 and 63, an article entitled MONEY OR MEDICINE which I think is extremely unfair to the physician. It is an attempt to ridicule organized medicine and ignores the effort it is making to improve the service to the medically indigent.

The average income of physicians is low but it is estimated that the physicians of the United States give to the poor under the present system of private practice at least a million dollars worth of free service per day. It is doubtful if any other class of our citizens does so much charity work as the physicians.

Under the voluntary co-operative efforts of physicians educational standards and requirements for medical practice have been steadily advanced, hospital facilities and standards have been improved in a great degree. Furthermore, physicians have been diligent in promoting preventive medicine and have instigated and advanced the legal enactments and machinery for the prevention and control of communicable diseases. The national health has never been better; in fact, during these hard times the death rate has reached a new low.

The decline in diphtheria, tuberculosis, and typhoid in the United States under the present medical system has been more rapid than in Great Britain and in some other countries where medicine has been partially or wholly socialized.

The medical care of the indigent frequently involves far more than the services of the physician. Effective treatment depends upon such adjuncts as adequate housing, food, clothing, nursing, etc. Many of the medical indigent are unemployable, wasteful or dissolute and are essentially institutional cases. At present, as in years past, these patients are almost invariably given freely any help that the phyician himself can render.

Despite the great accomplishments of physicians who have given us through their voluntary efforts the best medical service of any country and have served the poor unstintedly, Mr. Keelan holds them up to scorn as purely mercenary and ridicules their resistance to the communistic campaign now being waged, under the guise of helping the poor, to destroy private practice.

Dr. Charles J. Whalen, 25 East Washington Street, Chicago, editor of the ILLINOIS MEDICAL JOURNAL, who thinks and writes with independence and force, made this question the subject of his leading editorial in the current October issue. Dr. Whalen is thoroughly conversant with the arguments for and against present medical practice, and through various editorials has presented the subject fairly from the standpoint of the patient as well as that of the physician. Since your readers have heard the communistic side of the question, it would seem desirable to give them the defense of the American system. Elsewhere socialized medicine has reduced the quality of service to the patient, increased the total cost to the public, required an elaborate bureau of political appointees for its administration, but it has not given the health of the people increased protection, conservation or improvement.

All admit that a great bureau will be required to administer socialized medicine and as a job-creating proposal it has never been surpassed. Under it a horde of field agents and investigators would swarm over the land investigating and reporting to Washington on the daily activities of every citizen needing medical care.

John S. Wright.

HYMENOLEPIS NANA INFESTATION WITH SEVERE SYMPTOMS

Jacksonville, Illinois, October 16, 1938.

To the Editor:

Infestation with Hymenolepis nana, the dwarf tapeworm of man, may produce serious symptoms. Ward[1] gives the following as among those associated with the presence of Hymenolepis nana: abdominal pain or tenderness and diarrhea most frequently; anemia, dizziness and headache. Various nervous disorders and even epilepsy have been observed. It is because of the extreme severity of the signs of central nervous system irritation that the following case is reported:

A fourteen months old female baby was admitted to Passavant Memorial Hospital with cramping and diarrhea of two days duration. The infant had been breast fed throughout but had been given water that had not been boiled. The mother stated that the family thought the water in the neighborhood of their residence in the river bottom was not good. The baby had been seen by the family physician who prescribed eliminative treatment. Many minute worms were passed following this. However, the baby did not do well, the diagnosis of encephalitis was considered and hospitalization advised.

Admission temperature was 106.8. Physical examination showed a well developed, fairly nourished, markedly prostrated and dehydrated female infant. The anterior fontanelle was depressed, the eyeballs were sunken. The tongue was heavily coated, there was definite acetone odor on breath. Heart sounds were soft, pulse rate 168. The abdomen was distended, tympanitic but at the same time rather soft with no evidence of rigidity. All deep reflexes were depressed. The epigastric and abdominal reflexes were diminished. Plantar reflexes were present but no extensor phenomena secured. There was no neck sign or Kernig.

The white blood count was 10,900. Stool examination showed many ova of Hymenolepis nana, a few adult worms, many r.b.c. and some mucus.

Parenteral fluids, enemata and packs were the therapeutic measures employed. Breast feedings were continued with additional fluid by mouth when the infant was able to swallow. The temperature ranged from 103.4 to 106.6 during the twenty-four hours after admission. Muscular twitching was noted the morning after entrance. Increase of temperature to 108.8 that evening was associated with appearance of convulsions. Cardiac action became weaker with respirations more shallow until death occurred thirty-one hours after admission. Permission for autopsy was refused.

The large number of ova found, the presence of a few adult worms even after eliminative treatment prior to entrance, led to the thought that infestation was heavy. While the infant was referred to the hospital with a provisional diagnosis of encephalitis there were no organic findings indicative of this disease. The appearance was rather that of an extreme prostration from a toxemia for which no other source than the presence of ova of intestinal parasites could be found. The presence of red blood cells in the feces suggested either sufficient bowel irritation and tenesmus to produce bleeding or else oozing from sites of attachment of the parasites. Blood was found in the feces in a case reported by Goldman while Imes found bloody extravasation in the ileum at post mortem (Ward, loc. cit).

Frequency of Hymenolepis nana infection is given as varying from 0.5% in adults to as high as 39% in infants. An intermediate host is not necessary in the life history of this parasite. "If man can serve as both final and intermediate host the ingestion of a few ova in polluted drinking water might bring about a multiple or mass infection by virtue of later increase through multiplication within the host." (Ward, loc. cit.)

Convulsions are often ascribed by the laity to worms. Though they may sometimes be due to intestinal parasites usually some other factor is the causative one. The case here reported appears, however, to fall in the category of intestinal parasitic infestation with nervous system irritation sufficiently pronounced to cause hyperpyrexia, prostration, convulsions and death.

Frank Garm Norbury, A.M., M. D.

REFERENCE

1. Ward, H. B.: Animal Parasites, in Abt's Pediatrics, Vol. 8, p. 912 et seq., W. B. Saunders Co., Philadelphia, 1926.

STUDIES ON THE MIDBRAIN AND MIDBRAIN EXTRACTS

Chicago, Ill., October 25, 1938.

To the Editor:

The following report represents a compilation of several years of studies on the diencephalon and its correlation to the glandular and neurovascular apparatus of the body. The search for an all-important center in the midbrain was inspired by peculiar autopsy findings of this area in cases of thyrocrisis. Experiments were undertaken to: firstly imitate a state similar to thyrotoxicosis and thyrocrisis in larger animals such as dog, cat, sheep and monkey, secondly to treat those animals with an extract made of dien-

cephalon substance. The program was approached in various ways: (1) by interrupting the nerve supply of the thyroid gland, by thyroidectomies, by injecting chemicals into the thyroid gland and finally by injection of a minute amount of 2% formalin in 50% ethylalcohol (2) into the tuber cinereum area of the lower diencephalon. The former experiments (1) ("ascending" series) resulted in an encephalitis-like alteration of the tuber cinereum, nucleus paraventricularis and adjacent regions, the latter (2) ("retrograde" series) in simulating a state of anxiety.

In order to estimate the physical properties of the diencephalon substance, the material was examined with a small apparatus attached to the microscope. The apparatus was newly constructed for these tests using two electric currents for conductance measurements. The observations allowed an assumption of greater electro-chemical activity of the midbrain material in comparison with that obtained from distant regions of the brain.

Thus encouraged we attempted to produce an extract of the midbrain substance hoping, that we would find an agent, which would have a decided influence upon the chemism of the body. The first crudely prepared extracts already showed sharp reactions when injected into rats. The experimental animals uniformly offered the same picture of shock from 20 to 30 seconds after injection. Following a few initial tetanic convulsions the reaction changed into a state of paralysis of extremities, analgesia and anesthesia. The animals returned to normal within two hours.

As a next step the effect of carefully prepared, dehistaminized and sterilized saline, alcoholic and acetone extractions of beef brain diencephalon were studied on 30 and 45 days old rats. Immediate post mortem examinations soon after the onset of general paralysis in the animal revealed: swelling of the cerebral base, accumulation of enormous amounts of liquid blood intra- and extravascularily over the entire lower surface of the diencephalon, numerous pinpoint hemorrhages in the serous skins. Several series of experiments were carried over periods of 2, 4, 6 and 8 weeks by treating the animals with daily doses of midbrain extracts. Autopsies after these treatments presented: enlargements of the lower diencephalon, pathological changes of the thyroids, adrenals and genital organs.

The extracts then were tried on larger animals, which were prepared by injection of formalin in alcohol into the tuber cinereum area as mentioned before. With the beginning of the critical symptoms of fearfulness and apprehension the extracts were administered with the result, that the symptoms were alleviated temporarily. A marked fall in bloodpressure and an appreciable lowering of the bloodsugar, phosphor and calcium levels were noticed.

A differentiation of four fractions of extracts was accomplished during the process of preparation. We anticipate a variety of effects and activity of these four strains, which are being analysized as to their chemical structure. At the present time the first fraction appears to be the most effective one. It is my belief, that the various fractions of diencephalon extracts act as mediators upon the hypophysis thus influencing the different pituitary factors. This conclusion was strengthened by the evidence of lesser reactions in hypophysectomized rats.

Clinical observations corroborated the findings of the animal experiments. As outstanding features of the treatments were noticed: rapid and fairly long lasting decrease of bloodpressure and relief of anxiety. Laboratory notations before and after injections showed: lowering of the bloodsugar, phosphor and calcium levels, change of the refractive index and viscosity of the blood. Further data are now being collected on a large number of hospitalized patients to determine the physiological action and therapeutic value of the extracts.

An article with detailed description of all steps and procedures of my investigations is to follow this short survey in the near future. A list of the bilbliography also will be given at that time.

Erich H. Bukofzen, M.D.
1150 N. State St.

EDUCATIONAL COMMITTEE

Report for September and October, 1938

SPEAKERS BUREAU

Eighty doctors were scheduled to address meetings of the following groups: Kiwanis Clubs, Parent Teacher Associations, County Federation Women's Clubs, Rotary Clubs, Mothers Clubs, Women's Clubs, Public

Meetings sponsored by County Medical Societies, Church Groups, Hospital Auxiliaries, District Conferences Parent Teacher Associations, Junior High School Assemblies, Senior High School Assemblies, County Teachers Institutes, Lions Clubs, Home Bureaus, Farm Bureaus, College Science Clubs, Y. M. C. A.'s

Doctors were scheduled to give talks on Socialized Medicine and to participate in forums on this subject.

Special material was supplied to doctors throughout the state who were asked by their local lay groups to talk on the subject of State Medicine.

EXHIBITS

The Educational Committee planned two exhibits for the Marshall Field & Company window—these were on HAY FEVER and HUNTING AND TULAREMIA.

The Committee had an exhibit at the Annual Meeting of the Illinois State Nurses Association, Stevens Hotel, Chicago, October 19-21.

An exhibit was set up by the Committee at the American Dental Association Annual Meeting in St. Louis, October 24-28.

The Committee has been invited to present an exhibit of its work at American Medical Association Annual Meeting, 1939, St. Louis.

RADIO

The Committee is using stations WGN, WJJD and WAAF.

Seventeen programs were given during the months of September and October.

The Committee is supplying copies of its radio material to SEVEN other Illinois cities for local use.

Copies of October radio program were sent to 850 libraries and individuals.

MISCELLANEOUS

Special material was prepared for the Illinois Federation of Women's Clubs.

Material was supplied for district meetings of the Illinois Congress of Parents and Teachers.

The Secretary participated in a health program at the Chicago Woman's Clubs.

Suggested programs for the Women's Auxiliaries, county and state.

Material prepared for Maternal Welfare Committee.

Contacted Illinois Branch American Academy of Pediatrics about cooperation in educational program.

Arranged all postgraduate programs on Obstetrics & Pediatrics, supervised sending of notices to doctors, and the press releases.

SCIENTIFIC SERVICE

Requests for scientific speakers during the last two months have increased.

All sections of the state have been served and a wide variety of subjects presented as indicated in the following report by counties, speakers and topics:

Scott County Medical Society, Iowa—R. S. Berghoff—Heart Disease.

Henry County—C. E. Galloway—"Obstetrics."

Henry County—John O. Bigler—Pediatrics.

Union County—Cecil M. Jack—Heart.

Kankakee County—M. Herbert Barker—Nephritis & Edema.

Hancock County—J. W. Sours—Heart Disease.

Bureau County—A. H. Verbrugghen—Head and Spinal Injuries.

Effingham County—Frank Deneen—Diseases of the Gall Bladder and Liver.

Coles-Cumberland—Herbert E. Schmitz—Gynecology.

Maryland County—Arthur H. Conley—Fractures.

Jefferson-Hamilton—James H. Hutton—Endocrine Therapy of Proven Value.

Peoria Medical Society—Conrad S. Sommer—Emotional Problems in Internal Medicine.

Peoria Medical Society—Ford Hick—Internal Medicine.

Christian County—R. A. Tearnan—Endocrine Factors in Gynecological Disorders.

Carroll-Jo Daviess Counties—Arthur H. Parmelee—Diseases of the Newborn.

Carroll-Jo Daviess Counties—William F. Mengert—Prolonged Labor.

St. Joseph's Hospital, Aurora—J. P. Greenhill—Relief of Pelvic Pain.

Knox Warren Counties—William J. Dieckmann—Forceps Delivery.

Knox Warren Counties—Clifford Grulee—Care of the Premature Infant.

Ninth Councilor District—H. M. Camp—Menace of Socialized Medicine.

Ninth Councilor District—H. H. Hill—Proposed Studies of the Maternal Welfare Committee.

Ninth Councilor District—S. E. Munson—What Organized Medicine Has Done for the Physician.

Ninth Councilor District—Andy Hall—Purpose and Progress of the State Maternal Welfare Committee.

Ninth Councilor District—T. B. Williamson—Explanation of the County Platform.

Tenth Councilor District—John R. Neal—What Organized Medicine Has Done for the Physician.

Tenth Councilor District—J. S. Templeton—Purpose and Progress of Maternal Welfare Program.

Tenth Councilor District—H. M. Camp—Menace of Socialized Medicine.

Tenth Councilor District—H. H. Hill—Studies of the Maternal Welfare Committee.

Tenth Councilor District—T. B. Williamson—The County Platform.

Douglas County—O. H. Crist—Management of Prolonged Labor.

Beardstown Hospital Staff—T. D. Masters—Complications of Diabetes.

Will Grundy—Leo K. Campbell—Recent Advances in the Management of Diabetes Mellitus.

Morgan County—Bert I. Beverly—Behavior Problems of Children.

Perry County—O. P. J. Falk—"Recent Advances of Therapeutics."

Perry County—Lee Dorsett—"Management of Hemorrhages."

Stephenson County—I. R. Sonenthal—"Dementia Praecox."

Stephenson County—John A. Wolfer—Recent Advances in Surgery.

Stephenson County—Lee Connel Gatewood—Amebiasis.

Iowa Illinois District Association—Archibald L. Hoyne—Treatment of Some Common Contagious Diseases.

Madison County—Don C. Sutton—Heart Disease.

Rock Island County—T. B. Williamson—"Why a Maternal Welfare Committee."

Rock Island County—David S. Hillis—Management of Prolonged Labor.

Rock Island County—Clifford Grulee—Care of the Premature Infant.

Effingham County—Millard Arbuckle—Diagnosing and Treating Pulmonary Disorders.

Will Grundy County—Guy M. Cushing—Acute Perforating Ulcer of the Stomach.

McDonough County—Frederick H. Falls—Value of Prenatal Care.

McDonough County—Edwin N. Nash—Obstetric Analgesia.

Carroll-Jo Daviess Counties—Bert I. Beverly—Behavior Problems.

Carroll-Jo Daviess Counties—Charles B. Reed—Medical Complications of Pregnancy.

Jefferson-Hamilton—T. B. Williamson—Technic of Home Delivery.

Stephenson County—Gustav L. Kaufmann—Infant Feeding.

Kankakee County—Aaron Arkin—Differential Diagnosis of Organic Heart Disease.

Wayne County—T. B. Williamson—Technique of Forceps Delivery.

Stephenson County—Eugene Cary—Management of Prolonged Labor.

Union County—Benjamin Boshes—Neurosyphilis.

Will-Grundy County—Fred M. Drennan—Cause & Treatment of Irritable Colon.

DuPage County—Robert Black—The Rheumatic Syndrome in Children.

Coles-Cumberland—Robert S. Berghoff—Heart Disease.

Knox-Warren Counties—Robert A. Black—Rheumatism & Heart Disease in Children.

Knox-Warren Counties—Ralph Reis—Medical Complications of Pregnancy.

Stephenson County—Archibald Hoyne—Meningitis.

Stephenson County—James H. Bloomfield—Placenta Previa.

St. Joseph Mercy Hospital, Aurora—R. P. Mackay—"Psychological Management of Patients."

Monroe County—J. S. Templeton—Home Deliveries.

Monroe County—Frank B. Hiller—Obstetrical Surgery.

Fifth Councilor District—S. E. Munson—Medical Economics.

Fifth Councilor District—Harold M. Camp—Medical Economics.

Fifth Councilor District—Maurice Blatt—Fevers in Children and Their Treatment.

Fifth Councilor District—Charles Edwin Galloway—Lesions of the Cervix.

Green County—Thomas J. Coogan—Heart.

Tri-County—Warren H. Cole—Hyperthyroidism.

Will-Grundy—A. J. Arieff—Treatment of Epilepsy.

Stephenson County—Joseph K. Calvin—Nephritis.

Stephenson County—A. F. Lash—Puerperal Sepsis.

McHenry County—Philip H. Smith—Management of Placenta Previa.

Montgomery-Macoupin Counties—L. M. Riordan—Toxemias of Pregnancy.

Montgomery-Macoupin Counties—J. J. Donahue—Care of the Premature.

Montgomery-Macoupin Counties—O. H. Schwarz—Prolonged Labor.

Montgomery-Macoupin Counties—I. M. Levin—Pertussis.

Lake County—A. J. Kobak—"Toxemias of Pregnancy."

Lake County—Frederick H. Falls—Management of Prolonged Labor.

Lake County—Isaac Abt—Premature Infant.

Jersey-Greene—W. B. Raycraft—Prevention of Contagious Diseases.

Jersey-Greene—William B. Sorbin—Obstetric Injuries.

NEWSPAPER SERVICE

Articles written and approved on the following subjects: The Hunting Season, Getting Ready for Winter, Want to Be a Hundred? Pneumonia Trends, Healthy Baby, Bright's Disease, School Child's Lunch Box, Danger Signals—Doctor Edward Livingston Trudeau.

643 releases sent announcing regular and special meetings of the following counties: Logan, Bureau, Effingham, Hancock, Jefferson-Hamilton, LaSalle, Wayne, Rock Island, Franklin, McDonough, Henry, North Shore Branch, 5th, 9th and 10th Councilor District Meetings.

8,895 special health columns as follows: Health columns to Illinois papers; Health columns to Chicago papers; Editorial style health articles to papers; Articles sent to lay list includes Home Advisers, Health Chairman, W.P.A. Teachers, Schools, Red Cross; Articles to libraries for bulletin boards and health files; Articles to hospitals of the state for bulletin boards.

SPECIAL HELP TO COUNTY SOCIETIES

202 notices for Effingham County; 206 notices for Bureau County; 504 notices for Henry County; 350 notices for Hancock County; 606 notices for LaSalle County; 143 notices for Perry County; 226 notices for Jefferson-Hamilton County; 130 notices for Franklin County; 500 notices for Fifth Councilor District; 322 notices for Tenth Councilor District; 168 notices for Ninth Councilor District; 482 notices for Whiteside County.

SUMMARY

In looking over the report, it is quite evident that the Committee is being used both by the county societies and by important lay groups in the state.

Respectfully submitted,

JEAN McARTHUR,
Secretary.

COMMITTEE ON MATERNAL WELFARE

The Council of the Illinois State Medical Society at their recent reorganization meeting, reappointed the

Committee on Maternal Welfare. This Committee is to serve for another year. The Committee named:

First District—A. B. Owen, M. D., Rockford, Illinois.

Second District—Joseph T. O'Neill, M. D., Ottawa, Illinois.

Third District— Chicago, Illinois.

Fourth District—Phebe L. Pearsall, M. D., Moline, Illinois.

Fifth District—R. R. Loar, M. D., Bloomington, Illinois.

Sixth District—Milton E. Bitter, M. D., Quincy, Illinois.

Seventh District—Walter D. Murfin, M. D., Decatur, Illinois.

Eighth District—O. H. Crist, M. D., Danville, Illinois.

Ninth District—T. B. Williamson, M. D., chairman, Mt. Vernon, Illinois.

Tenth District—H. G. Horstman, M. D., Murphysboro, Illinois.

Eleventh District—H. G. Horstman, M. D., Secretary, Joliet, Illinois.

Dr. Frederick Falls and Dr. Harold Hill will continue to act in an advisory capacity.

The Council commended the Committee on their progress to date stressing the fact that this and the Educational Committee were the only ones now in existence acting as a liaison between the laity and medical profession.

Each county medical society has been asked to name a county chairman for the following year. It is desirable this be done at once in order that the state organization may be completed.

The district meetings will be continued this year. This serves as an educational feature to the county chairman and members of local societies in order that the object and function of the Committee may be brought to the individual physician.

The county program will be more thoroughly understood after these meeting and the attitude of the State Medical Society toward this movement will be outlined.

In addition to the education of laity along prenatal lines this next year will seen an attempt made to study the facilities for hospital care of expectant mothers and babies. A survey will be made by means of a questionaire and communities not having ample facilities will then be enlightened as to the progress made in this branch of medicine.

A pamphlet on suggested care for expectant mothers has been prepared and will soon be available for distribution.

Dr. Munson, President of the State Society, attended the recent meeting of the Committee and stressed the fact that the sincerity of the county chairman was the all-important factor in the success of the program. He is the man who must guide the principles through the local channels.

T. B. Williamson, M. D., *Chairman.*
John F. Carey, M. D., *Secretary.*

ILLINOIS STATE MEDICAL SOCIETY

Additional 100% Counties: 1938 Membership

Paid in Full

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Massac—

SCIENTIFIC EXHIBITS AT THE ROCKFORD MEETING

Applications for space in the Scientific Exhibits at the Rockford Meeting, May 2-4, 1939, have already begun to come in. A hall adjoining the first floor of the hotel has been provided so that the exhibits may all be in one place instead of being scattered about as they were three years ago.

This year several booths are to be reserved for miscellaneous exhibits that those having something of interest that will occupy only eighteen to twenty-four square feet may be provided with space.

We especially hope that those who are preparing exhibits for the A. M. A. or have exhibits that have been presented before other societies will apply for space. The officers of the A. M. A. accept exhibits that have been presented at a state society meeting and exhibitors find the preliminary showing of great value.

For application blanks write to N. S. Davis, III, 700 N. Michigan Ave., Chicago, Illinois.

THIRD CONGRESS OF THE PAN-PACIFIC SURGICAL ASSOCIATION

The Third Congress of the Pan-Pacific Surgical Association is to be held in Honolulu, September 15 to 28, 1939.

This will be the third meeting of the Pan-Pacific Surgical Association, the two former ones having been held in 1929 and 1936 also in Honolulu. An invitation is extended to all surgeons of your association to meet in Honolulu outstanding men from countries of the Pacific area, including Australia, New Zealand, China, Japan, Java, Canada, United States, for an interchange of surgical thought and for the purpose of bringing about better understanding through personal contact among the surgeons of these countries.

There will be sections in fractures and orthopedics, general surgery, gynecology, motion pictures, neurosurgery, ophthalmology, otolaryngology, roentgenology, plastic surgery, thoracic surgery and neurology, all headed up by outstanding men as chairmen for the United States and equally prominent men as chairmen for the Australasian section. The Congress affords not only participation in interesting scientific papers, but a most enjoyable vacation in the "Paradise of the Pacific."

Communications for information should be directed to George W. Swift, M. D., 902 Boren Avenue, Seattle, Past President of the Association; Frederick L. Reichert, M. D., Stanford University Hospital, San Francisco, program chairman for the United States; Howard Updegraff, M. D., 6777 Hollywood Blvd., Los Angeles, program vice-chairman; or Forrest J. Pinkerton, M. D.,

Secretary-Treasurer of the Association, Young Building, Honolulu, Hawaii.

PAY PENSIONS NOW

Fiction Behind the Social Security Tax the Vicious Angle

The social security tax, however laudable the idea, has become a vicious kind of concealed sales tax. And here Roosevelt has permitted a true example for his enemies to pound. They can point to their humanitarian agreement with his purpose but damn his means.

And this newspaper in this instance joins them in damning his method to do something, however humanitarian, that place so heavy a burden on those least able to pay. Taxing progress. Punishing enterprise.

Not only does the worker lose the deduction from his wages, but he must pay on all he buys, not only the tax but the wholesale and retail overhead and profits added to it. And there are no pensions being paid out of the fund yet either. Years must elapse before enough credits are built up to provide enough for a dozen eggs a week or room rent. If pensions should be paid, pay them now. Pensions are equally as good a way of distributing purchasing power as any other. Devices for regulation to need are not unknown.

But more vicious even than its viciousness as a concealed sales tax, it can be a death blow to enterprise and little business. Businesses can live or die on a 3% margin. A business can live a hundred years comfortably breaking even, continue to give employment and maintain wages. A business one point in the black making 1% can go on forever. Thousands of businesses are on this margin or were while they lasted. The business breaking even or the business at 1% profit cannot continue and pay the 3%.

These cases are, of course, extreme simplification. Credits can be taken advantage of for some years in each case to cover operation, but the business that goes bankrupt after five years just because it didn't have a 10% margin to carry on, is one killed by a yearly drain of 2%.

Under social security payroll taxing, not only is the enterprise and a start necessary to make a little business but 3% more, a feat in capitalism, must be dug up whether it breaks it or not. An unnecessary burden is placed on the enterprise that makes jobs.

But if it were met as simple, honest government financing should be and not by high tory political fictions to please credit manipulators—it would be on the income tax, and pensions would be paid now.

Under payment for pensions by income tax, small business would not be forced to pay it whether they made it or not, and the large numbers debarred now from its benefit could be included in its humanitarianism.

We conclude that it is better to bring it out in the open as a straight-forward sales tax, acknowledged, and to include everyone and stop the vicious concealment of it as a hidden sales tax. They repay the accumulation to those who have paid, so small business can again replace worn equipment and the worker can get a safer car, new furniture, clothes or a washing machine.

Or, better still, put it on the income tax even if it broadens the base. The worker is better off paying an income tax that is less than his salary deduction and much less than a concealed sales tax.

All sales tax, open and concealed, falls heaviest on the worker and salaried man. — *Edgewater News*, August 23, 1938.

ALL HONOR TO MEDICINE

In the Voice of the People, *Chicago Tribune*, the Reverend William J. Ohan, expresses kind feelings for the doctors.

During 29 years I have visited the sick in almost every one of the 106 hospitals listed in our city directory. Last year I called on sick folk in 56 hospitals. I have learned to know them intimately. There are two erroneous ideas I'd like to correct. First, the public imagines hospitals are coining money and are heartless in their charges for hospitalization. The fact is that few of them make any money. I know the Presbyterian Hospital would have to close its doors if it were to depend entirely upon the pay patients and continue its large charitable work. My 29 years' experience with hospitals has shown that every hospital (but one) has cooperated and, at my recommendation, accepted patients either as charity patients or at a reduced rate to meet the ability of the patient. If the public were to stop and analyze the cost of equipment, the attendants needed to keep the hospital spick-and-span, the tireless and cheerful service of the nurses, the immaculate care given in the operating rooms and the thousand details attended to, it would appreciate the hospitals more. The second error is that doctors are getting fabulously rich and that they are heartless in their charges. Here again I want to say it to the credit of the doctors. Not one of them has ever refused to render the needed medical service to anyone I recommended. All have cheerfully given free service and gladly cut the bills to meet the ability of the patients. Let us honor these men who are ready to help us to health and honor the institutions (the hospitals) which seek to put us on our feet in the shortest time possible.

SOCIAL SECURITY COSTS UNKNOWN

(Copyright, 1938, by Science Service)

Washington.—Government officials have no idea how much the Social Security old-age insurance will cost forty years from now. Such estimates have been reported frequently.

Despite intricate calculations, or perhaps because of them, Consulting Actuary W. R. Williamson, of the Social Security Board, confesses that it is impossible now to predict the possible cost of the plan when 1980 rolls around.

First among the uncertainties is the number of men and women who will survive to the age of 65 in future years. The experience of insurance companies, Mr. Williamson does not wish to rely on in making this estimate, because the insurance companies, medical ex-

aminations and other factors make the situation of the life insurance holder different from that of the general population. A margin of safety for the insurance company in figuring death payments becomes just the opposite when the object is to figure life annuities.

New discoveries in medical science may reduce the death rate from old-age diseases. Such advances would add to the cost of old-age insurance. Invention of new contraptions like the automobile and airplane, on the other hand, might increase the likelihood of accidental death, thus reducing the cost of old-age payments.

War would entirely upset predictions of survival and would reduce costs of the plan.

Another uncertainty is the number of individuals covered by the plan.

"There is as yet no clear evidence of the exact number of covered workers or approximate full-time jobs," says Mr. Williamson in his report for the Social Security Bulletin.

SCIENTIFIC EXHIBIT AMERICAN MEDICAL ASSOCIATION

Application blanks are now available for space in the Scientific Exhibit at the St. Louis Session of the American Medical Association, May 15-19, 1939. Attention is called to the fact that the meeting is a month earlier than usual, and applications close January 5, 1939. Blanks will be sent on request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn St., Chicago, Ill.

ANNOUNCEMENT

The Physician's Association, Department of Public Welfare, State of Illinois, held its third annual meeting in the Kankakee County Medical Society rooms, Arcade Building, Kankakee, Illinois, on October 12, 1938.

The morning session which convened at 10:00 A. M., was given over to the business activities of the association and the election of officers. Officers elected are: Drs. Francis J. Griffin, president; Marjorie R. Nesbitt, vice-president; Jacob W. Klapman, secretary-treasurer.

The afternoon session was called to order at 2 P. M. Dr. A. A. Low, Assistant State Alienist, spoke about the newly organized association of former patients of the Psychiatric Institute, and its implications for the entire group of mental patients.

Dr. Louis Belinson delivered a paper, giving a comparative survey of anti-luetic treatment in the State hospitals of Illinois.

The meeting adjourned at 4:15 P. M.

PROPHYLAXIS AGAINST PNEUMONIA A POSSIBILITY

A U. S. Public Health Service release from Washington, October 21, 1938, says:

Prophylaxis against pneumonia appeared as a possibility today on the strength of recent tests of a new vaccine.

The agent has been developed after many years of intensive laboratory research by Dr. Lloyd D. Felton, Senior Suregon, United States Public Health Service, and others, working under grants from the Influenza Commission of the Metropolitan Life Insurance Company and the Pneumonia Funds of Harvard and Johns Hopkins Universities.

The vaccine used is sugar-like in nature. It is a chemical portion of the pneumonia germ and contains all the immunizing qualities of this microbe. It immunizes men and mice. The fact that the entire germ is not necessary to produce active immunity, and also that the immunizing fraction is practically free from the reactions common to almost all vaccines, led to a study of its effect on human beings.

The most baffling factor among the unknowns in man's fight against disease is the nature of his resistance to infection.

Why, for example, does one man come down with pneumonia while his 449 neighbors, who breathe the same air day in day and out and grasp the same door knobs, resist the disease? Almost everyone has the germs in his throat, but somehow only one, annually, out of each 450 persons in the United States, apparently lacks the lethal weapons in his blood stream necessary to stave off their invasion and contracts pneumonia.

Early studies of immunity disclosed that germs provoke the production within our system of anti-bodies —specific weapons against specific microbes. But— many individuals who have no demonstrable anti-bodies against a particular germ nevertheless resist its invasion!

To investigate further the nature of this natural resistance and attempt to increase it, Dr. Felton and others present the seventh and eighth of a series of studies on immunization substances in pneumococci in "Public Health Reports" for October 21, 1938. The first of these gives the results of the new vaccine and its effect in the production of immunity to pneumonia; the second, of a field test to determine its preventive value.

"A single injection containing two milligrams of this antigen," said Dr. Felton, "stimulates as much antibody as multiple injections of the usual pneumococcus vaccine. This was true in the majority of the individuals tested. There was, however, a high degree of individual variation which, in turn, suggested a great variation in susceptibility to pneumonia."

The material used is soluble, stable, can be readily standardized and sterilized. In addition, it is stable as a dry powder, so that it is possible to have a supply on hand in case of emergencies, providing it is definitely proved to be an effective preventive for the pneumococcus infection. It is easier to handle, and may prove to give a resistance similar to natural immunity.

Recent tests were conducted in the Civilian Conservation Corps camps of New England and the West Coast during the winter of 1936-1937. Altogether over 70,000 young men were under observation, of whom about 30,000 volunteers were inoculated with the pneumonia antigen. The remainder provided, for comparison, a control group representing the general uninoculated population.

In the New England camps, pneumonia was almost one and three-quarter times as great among the uninoculated as among the inoculated. In the West Coast camps the contrast was still greater, the frequency among the uninoculated being nine times that among the inoculated. These findings essentially confirmed impressions gained from similar preliminary tests conducted in the New England camps.

"The results are promising," according to Dr. Felton, "but there is need for careful investigation regarding the extent and duration of immunity conferred by the new antigen before its general use as a prophylactic agent can be positively recommended."

NEW USE IS FOUND FOR SULFANILIMIDE TO SCIENCE SERVICE

Sulfanilamide now promises to help diagnosis of and recovery from undulant fever. The discovery that it could help in this illness was made by chance, Drs. Henry Welch, John A. Wentworth and Friend Lee Mickle of the Connecticut State Department of Health reported at the meeting here of the American Association of Immunologists.

The chemical causes an increased ability of the undulant fever patient's white blood cells to destroy the Brucella organisms. This should help to speed recovery.

This activity of the white blood cells is specific for these particular germs alone, the Connecticut scientists found. Sulfanilamide caused no such increase in their ability to attack other germs with the exception of certain streptococci and staphylococci which are so widely distributed that most persons have probably developed some immunity to them.

White blood cells of infected animals treated with sulfanilamide lose their ability to attack Brucella organisms when removed from their own blood and suspended in the fluid or plasma of blood from normal animals.

THE ROCKEFELLER FOUNDATION. INTERNATIONAL HEALTH DIVISION ANNUAL REPORT, 1937. NEW YORK. 49 WEST 49th ST.

Endocryne Therapy in General Practice. By Elmer L. Sevringhaus, M.D. Chicago, Ill. The Year Book Publishers, Inc., 1938. Price soft bound $2.75 post paid.

This volume contains 192 pages and 26 plate pages. It is unlike any other work on Endocrynology in these respects: (1) *Treatment Only*: It is strictly a manual of therapy, intended for everyday use in general practice. (2) *For General Practitioners*: This book wasn't written for research men or laboratory workers (although the author has made important contributions to endocrine research). (3) *Simple*: Gives exact dosages and details of administration. Uses the common names to tell which extracts are best for various conditions. (4) *Fundamental*: Instead of advising use of one hormone for one or more symptoms or syndromes, this manual stresses the stimulation of fundamental processes by given hormones—in a way every physician can understand, by a technic he can use. (5) *Comprehensive*: Covers all phases of endocrine therapy, not just one gland. (6) *Clearly Arranged*: A chapter to each gland. Chapters are divided into sections on "Function" (brief), "Diagnosis," "Therapy," "Preparations Available," "Prognosis." (7) *Modern Viewpoint*: This book avoids the time-worn empirical classification of syndromes and threads the whole subject together by the use of sound modern conceptions of anatomy and physiology. (8) *Straight-to-the-Point*: Limited to treatment every general practitioner can apply. Boiled down to 192 clearly printed, easy-to-read pages. (9) *Progressive*: The author's object is to "help physicians to keep up with genuine progress in endocrinology, to administer new therapy and make more exact diagnoses in some cases and to reserve judgment and withhold therapy when conservatism requires it." (10) *Yet Not Over-Enthusiastic*: What not to do is stated as fully as what to do. This is a *safe* guide to advanced practice.

Care of Infants and Children. By Harry Lowenburg, M. D. New York-London. The Whittlesey House. McGraw-Hill Book Company. 1938. Price $2.50.

This book, is intended as a guide to help the mother or nurse to carry out the routines prescribed for the care of the child.

VITAMIN B_1: METHODS OF ASSAY AND FOOD SOURCES

Hazel E. Munsell, Washington, D. C. (*Journal A. M. A.*, Sept. 3, 1938), states that the importance of vitamin B_1 in physiologic and pathologic conditions has emphasized markedly the need of devising accurate methods for the quantitative determination of this substance in foods. Until recently the chemical identity of vitamin B_1 was unknown, rendering it impossible to develop chemical methods of analysis, and accordingly recourse was had to biologic methods of assay using rats and pigeons as test animals. Much information regarding the vitamin B_1 content of foods has been gained in this way, especially by the method in which the growth of rats was used as the measure of potency. The technical aspects of various methods of bioassay for vitamin B_1 are presented from the point of view of quantitative interpretation of the results obtained and the chemical methods that are being developed are discussed. The article also evaluates foods as sources of the vitamin.

MOSTLY SCOTCH

Jones: "How is your son getting along in college?"

Smith: "He must be doing pretty well in languages. I just paid for three courses—$10 for Latin, $10 for Greek, and $100 for Scotch."—*Pup.*

A woman's maiden aim is to change her maiden name.

Original Articles

THE POSITION OF THE AMERICAN MEDICAL ASSOCIATION

IRVIN ABELL, M. D.
President of the American Medical Association
LOUISVILLE, KY.

At the special session of the house of delegates of the American Medical Association held in Chicago, September 16-17, 1938, President Irvin Abell, Louisville, Kentucky, delivered the following address:

Mr. Speaker and Members of the House of Delegates:

Article 2 of the Constitution of the American Medical Association reads as follows:

The objects of the Association are to promote the science and art of medicine and the betterment of public health.

Section I, Chapter I, of the Principles of Medical Ethics reads as follows:

A profession has for its prime object the service it can render to humanity: reward or financial gain should be a subordinate consideration. The practice of medicine is a profession. In choosing this profession, an individual assumes an obligation to conduct himself in accord with its ideals.

In these times of changing trends in social thought it is still well to adhere to those age-old principles as guiding lights in our efforts to furnish the American people with the best medical service obtainable. At the time of their adoption, the form of society as a whole was comparatively a simple one: its evolution through the years has developed it into an exceedingly complex organization, involving changes in character of practice and in distribution of service. During these years the medical profession has sought constantly to advance its standards in every direction that promotes efficiency and operates for the increased welfare of the people we serve. Drastic changes have been made in medical education, affording assurance that the graduate of today is competent and efficient; hospitals have been improved, insuring dispensation of service compatible with modern medical knowledge; the fields of specialization have been clarified and special training delineated for those desiring to register therein. The responsibility for the advancement of medical lore rests solely on the profession; its chief capital investment is represented by the constantly accumulating body of knowledge stored in the minds, ideals, traditions and publications of its members, which is shared freely with the public through universities, journals, discussions, the public press, radio and individual consultations. This capital cannot be monopolized for profit; it does not fit into the capitalistic concept of economics, yet it is the most valuable asset we possess. The principles of ethics by which we have been governed since the organization of the American Medical Association have been criticized as being obsolescent and antiquated. It is readily admitted that its underlying principles are ancient, but it is submitted that they are the only ones, whether in the ethics and economics of medicine or industry, that have stood the test of time. The medical profession by principle and tradition is committed to the idea that the prime object, the standard of value and the social reason for its existence are all one thing—the service it can render humanity. That service is further interpreted as the maintenance of health and the postponement of death. Whatever plan is proposed with regard to medical care is automatically tested and accepted or rejected by the profession in relation to its influence on the morbidity and mortality of the community or communities affected.

I beg your indulgence in thus briefly reviewing some of the fundamental, altruistic principles of the American Medical Association before proceeding to the matters pertinent to this special session of the House of Delegates.

PURPOSE OF THE SPECIAL SESSION

Following the passage of the Social Security Act, the President appointed an interdepartmental committee to coordinate health and welfare activities in order that the full benefits of the federal program under the act's provision may reach with minimum delay and maximum effectiveness the women, men and children for whose purpose the program was brought into existence. As you are aware, Miss Josephine Roche, chairman of this committee, announced in May, 1938, that a conference would be called in Washington to consider a national health program which had been developed by a subcommittee known as the Technical Committee on Medical Care. Miss Roche was invited to attend the annual session of the House of Delegates

held in San Francisco in June but found it impossible to do so. You heard her message, which was read to the House of Delegates and which is incorporated in the proceedings of the San Francisco session.

In accordance with the instruction of the House of Delegates some of the members and officers of the Association attended the National Health Conference and had opportunity to express your point of view. Those in attendance included your president, Dr. Irvin Abell of Louisville, Ky.; your Secretary, Dr. Olin West; the chairman of the Committee on Medical Care, Dr. William F. Braasch of Rochester, Minn.; the chairman of the Committee on Scientific Assembly, Dr. James E. Paullin; the chairman of the Council on Industrial Health, Dr. Stanley J. Seeger; the chairman of the Board of Trustees, Dr. Arthur W. Booth; the Editor of THE JOURNAL, Dr. Morris Fishbein, and several presidents and secretaries of state societies. The newspapers and periodicals have reflected to some extent the attitudes of those who were in attendance at that conference. The members included physicians and representatives of correlated professions, who were in a distinct minority; numbers of representatives of labor organizations, mutual aid and welfare organizations, farm bureaus and federations, publicists chiefly associated with liberal and radical periodicals, leading workers in the field of the hospital and of hospital insurance organizations, and governmental employes.

The Board of Trustees will no doubt present to you an outline of the National Health Program which was presented to the National Health Conference. It is for you to consider the various aspects of this program and to determine to what extent the American Medical Association shall endorse or oppose the various phases of the plans proposed. Bear in mind that the National Health Conference did not itself come to any definite conclusions. The program was set forth and largely supported by representatives of various governmental departments. Many of the lay members in attendance gave unqualified endorsement to the program as a whole or in part. Representatives of the American Medical Association, however, were unanimous in stating that they had no authority to take action on any part of the program or on the program as a whole; rather, that this was a function of the House of Delegates, the representative bady of the American Medical Association, and that at a later date this program would be submitted to the House for its consideration.

During the National Health Conference no attempt was made to elicit, nor was opportunity given for, the presentation of alternative programs or for detailed discussion of all or any part of the program. If there was any single proposal on which all of those present seemed to be in agreement, it concerned the demand for a cabinet position on health and medical service under which all of the health and medical services of the government might be united. As our government is now constituted, appropriations to put into effect various parts of the program may affect legislation involving half a dozen or more federal bureaus.

NEED FOR WIDER DISSEMINATION OF ACCOMPLISHMENTS

The medical profession of the United States faces a situation which is unique. Without calling the organized medical profession, or any considerable representation among those engaged in practice, into conference, a vast plan affecting health and medical care has been proposed to the people. In the forwarding of this plan, forces of propaganda have apparently made a studied effort to indicate that the American Medical Association opposes all change and that it is essentially a stand-pat organization. There would seem to be need at this time for a wider dissemination of the truth as to what has been accomplished by the American Medical Association for the people of this country and as to its true attitude toward the changes that are occurring in and that are being proposed for the medical care of our people.

POLICIES OF THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association has constantly recognized the need for continued expansion of preventive medicine and a wider use of medical care. It has, however, at the same time been greatly concerned with the methods of administering both preventive medicine and medical care and with the ultimate effect of various changes on the morale as well as on the health of our people. The charge which is sometimes made, and which was made by radical

speakers during the Health Conference, that physicians oppose changes because of a desire for more and more money, is an outrageous misstatement of our attitude. It is a fundamental tenet of the American Medical Association that the poverty of a patient should demand the gratuitous services of a physician; but endowed institutions and organizations for mutual benefit or for accident, sickness and life insurance or for analogous purposes have no claim on physicians for unremunerated services. As a professional man the individual physician has a right to determine the conditions of his service.

It is a fundamental tenet of the American Medical Association that it is unprofessional for a physician to dispose of his services under conditions that make it impossible for him to render adequate service to his patient, because to do this would be detrimental to the public. It is established as a principle of our organization that it is unprofessional for a physician to dispose of his professional attainments or service to any lay body, organization or group or individual, by whatever name or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him. Such a procedure has been established as beneath the dignity of professional practice, as unfair competition with the profession at large, as harmful alike to the profession and the welfare of the public and as against sound public policy.

EXPERIMENTATION WITH NEW FORMS OF PRACTICE

Within these fundamental tenets, experimentation in new forms of medical practice has not been inhibited. Hundreds of experiments have been carried on in the past and are now being carried on under the auspices of medical societies which are component parts of this organization, planned distinctly with a view to securing a wider distribution of medical service and to making more and more medical care available to a greater number of people. Thus the American Medical Association has never opposed the principle of group hospital insurance, notwithstanding repeated attempts by those who would place the Association at a disadvantage in asserting that this House of Delegates has opposed this principle. The American Medical Association, through its component societies, has frequently given aid to the development of group hospital insurance, asking only proper safeguards for the patient and for his physician in the development of such plans.

CARE OF THE INDIGENT

The Association has never opposed suitable care by municipal, county, state or other governmental agencies for the indigent or for those on the borderline of indigence. It has urged state, county and other medical societies to develop "the most accurate and complete information that will enable them to maintain continuous medical care that is sufficient in amount and satisfactory in quality."

STATE INTERFERENCE WITH MEDICAL PRACTICE

The Association has constantly opposed the adoption of any form of state medicine by any definition of that term and it has refused to endorse vague plans that would make the care of the indigent and of those on the borderline of indigence, or those well able to pay, a burden on the workers of this country. The American Medical Association has never opposed suitable participation by the government through any of its agencies in preventive medicine or in any legitimate function of government in relationship to the care of the sick. By and with the aid of local, county, state and national medical organizations, the United States Public Health Service has been enabled to carry out far reaching plans for the control of venereal disease, of pneumonia and of cancer, for the expansion of personal and public hygiene and for the prevention of infections. Without such participation these accomplishments would never have been attained.

MEDICINE NOT IN POLITICS

The American Medical Association and its constituent bodies have constantly opposed any attempts on the part of local, county, state or federal governments to make medical care a political issue. American medicine fears political bureaucracies. It fears the acceptance of European models which have been set up by various so-called philanthropic foundations in an attempt to socialize medical practice in this country. The medical profession of this country wishes to keep the practice of medicine within the medical profession. It does not conceive

that any political agency can do the job with one-tenth the efficiency at ten times the cost.

THE PRINCIPLE OF INSURANCE

The American Medical Association has never opposed the principle of insurance. An organization such as ours is in itself of the nature of a cooperative group in which individuals have banded together and by their individual contributions have made possible great accomplishments which individually they could not have attained. It is not the principle of insurance that is opposed by American medicine. The principle which we do oppose is political administration and manipulation of the insurance organization, devotion of a considerable portion of the funds thus derived to the payment of great numbers of employes not directly concerned with the service but intimately concerned with the maintenance of a political organization, and expansion of such organizations to wield greater and greater power in the affairs of the nation.

The American Medical Association has not opposed insurance against the costs of sickness, of disability, of unemployment, of old age or of death. It does oppose any interference by any outside agency—commercial, governmental or otherwise—into the relationship between doctor and patient which is fundamental in good medical care.

PERSONAL RELATIONSHIP BETWEEN DOCTOR AND PATIENT

We have recently heard the statement that the worth of this relationship is a fancied one; yet it possesses reciprocal qualities that inure to its value both to the physician and to the patient. With the realization by the physician that the patient in selecting him for personal service has demonstrated a confidence in his ability and integrity comes a determination to justify such trust by giving service to the best of his ability. The family physician knows the ancestry and heredity of the patient, is familiar with his temperament, the conditions under which he lives and his financial and emotional worries, and has a sympathetic attitude toward his problems—collective knowledge that has a definite value in carrying one through the crises of illness and in thwarting or minimizing the encroachment of disease.

In the National Health Conference a number of speakers who participated drew a picture of the American people in which perspective was largely lost. They showed us not only as a nation in which one-third of the people are ill fed, ill housed and ill cared for in sickness, but a nation with numbers of people suffering agonies because unable to purchase medical care, unwilling to consult a physician for fear of the costs of such consultation, and dying because of lack of medical care. The presentation of this perspective without suitable correction was unfair not only to the medical profession but also to the people of this country.

There is need for far more factual knowledge than is thus far available. An attempt to secure such factual knowledge is being undertaken by the American Medical Association as a part of its nationwide survey of medical care. The reports of some of the counties already published in the Journal indicate that it is possible to make this survey an accurate picture of the status of medicine in every portion of the country. Without such a picture it is impossible for any agency to develop suitable scientific legislation to meet the actual needs that exist.

It is proposed that at the next convening of the Congress of the United States legislation will be introduced to put into effect the proposals involved in the national health program. It is a function of this House of Delegates to consider carefully the proposals that are made so that your representatives, your elected and employed officers, may carry into effect your point of view and bring that point of view suitably to the elected representatives of the people.

HOUSE OF DELEGATES SPEAKS FOR PROFESSION

Only this body speaks for the American medical profession as a whole. It is no secret that there has been an attempt in various places to lead the American people to believe that the American Medical Association is not representative of the American medical profession, that it is a weakened, disrupted and failing organization. The actual fact is that the Association speaks today with the greatest membership in its history. During the year 1937-1938 it gained more than 4,000 members, reaching a total of 110,000 in its membership.

When your decision is made during this special session of the House of Delegates, it will be broadcast by the press and by your own organs of expression to the people and the medical profession in this country. The principles and poli-

cies which we have thus far established do not forbid, nor have they ever contemplated, any opposition to a well considered expanded program of medical service when the need can be established. Neither is there any fundamental principle or policy which in any manner opposes aid to the indigent or the medically indigent if their indigence can be established. The principles and policies which this House of Delegates has adopted in the past have been developed with the single purpose of maintaining the quality and standards of medical care. To these high ideals I would urge you again to adhere. I would urge you also to consider seriously the obligation which rests on you, so that you may speak, when you do speak, with a united voice, and so that by and with your leadership the physicians of this country may also speak with a united voice in behalf of greater medical service and a greater medical profession.

THE EDUCATIONAL COMMITTEE: ITS ORIGIN AND WORK

James H. Hutton, M. D.

CHICAGO

Thirty years ago the Illinois State Medical Society considered inaugurating a program of health education for the laity but decided that the time was not ripe. Instead the Society organized a Lecture Bureau for county societies along lines similar to our present Scientific Service Committee. Even a few years prior to the organization of the Lay Educational Committee, a physician who spoke to a lay group on medical subjects was apt to be unkindly criticized. However, professional opinion underwent considerable change, and in 1922 the House of Delegates passed a resolution introduced by Dr. Charles J. Whalen to the effect that it go on record as endorsing a broad plan of publicity through pamphlets, addresses and the lay press, any or all, to the end that the public be enlightened on the truths and principles contained in the development, progress and present status of medicine in order to counteract the propaganda of many sects who claimed superiority in methods of healing. At the September, 1922 meeting of the Council a committee was appointed consisting of Drs. Whalen, Ferguson and Chapman. No instructions were given as to how the committee should function, nor were any funds placed at its disposal. It was to be known as the Lay Educational Committee. In general the object of the Committee was to make the doctor and the public better acquainted and to present him in a more favorable light before the public.

During the first year money was collected by voluntary contributions, the average contribution being $10 per member. In this way about $1,200 was collected. No sooner had this money been collected than the Committee was besieged by various persons with various and sundry plans for accomplishing all the objectives for which the Committee was created at a cost exactly equal to the Committee's funds. Most of these were agencies which wanted to do the work entirely through the press. Fortunately all of these were eluded.

In 1923 Mr. Jaklon was appointed as director of this work. After three months' trial, however, the ideas which he advanced were abandoned as unsatisfactory, largely because of the difficulty in gaining the doctors' interest and cooperation and in interpreting accurately their point of view by turning out news matter of academic interest from a central bureau.

In March, 1924, Miss Keller was employed as a full-time secretary and a fourth man was added to the Committee. The personnel of this Committee remained unchanged for the first decade of the Committee's existence.

By the end of the second year a fairly definite program had been planned and the money voluntarily collected had been exhausted. Since then the expenses of the Committee have been met by regular appropriations. These appropriations have changed from year to year as shown in the accompanying table.

1926-1927	$14,381.53	More than	$1.75 per member
1927-1928	13,165.27	About	1.70 per member
1929-1930	11,751.00	About	1.60 per member
1932-1933	10,284.89	About	1.47 per member
1935-1936	8,721.05	About	1.30 per member
1936-1937	8,351.86	About	1.20 per member

In 1926 the Scientific Service Committee was organized as a sub-committee. Its purpose was to supply speakers to county societies on request. It has always been the policy of the Committee to pay the expenses of the various speakers. Lately there has been added to this a slight honorarium. The expenses of the Scientific Service Committee come out of the funds of the Edu-

Read before Secretaries' Conference of Illinois State Medical Society, May 17, 1938, Springfield.

cational Committee. The Committee assists county societies not only in arranging speakers when called upon, but also by publicizing the meeting, sending out cards, newspaper notices, etc.

In the early years about one-third of the Committee's money and energy was expended in the education of physicians, members of the Illinois State Medical Society. It became evident that we of the profession needed quite as much educating in some respects as did the laity and so at a meeting in Moline in January, 1927, the name of the Committee was changed and it became the Educational Committee.

From its organization the Committee has regarded the county society as the sole judge of the Committee's activities in any county. The county societies used or failed to use the various facilities of the Committee as they wished.

Cooperating with various lay organizations has been one of the Committee's most important contributions to organized medicine. Groups that were formerly suspicious, if not actively antagonistic, have become our friends and perhaps the change of attitude has been as great on our part as it has on theirs. This change has been brought about by friendly meetings between the Committee and representatives of these various groups, and friendly, informal talks.

In every instance where a lay group in any county has desired to undertake any health activity, we have sought to place them in touch with the officers and members of the local county society with the idea first, of avoiding friction and second, of keeping these activities in proper and useful channels. If a request is made by any organization for cooperation, the approbation of the local county medical society must first be obtained before the Committee feels free to act. The Committee functions as a liaison medium between the medical profession and the public.

During the life of the Committee there has ben a notable reduction in infant mortality in this state. The reduction has been greater in Illinois, which did not accept Sheppard-Towner money, than in neighboring states which did accept this money.

An effort has been made to further and assist the activity of public health officers in the matter of disease prevention, such as diphtheria, typhoid, smallpox.

When the Committee was organized a great many organizations were doing some type of health work. There was no coordination and necessarily there was considerable overlapping. The Committee has been instrumental in bringing some order into this field so that there is now less duplication of service.

The Committee has insisted that pre-school child examinations should be made by the family physician in private and at reasonable fee where the family is able to pay. This view has been approved by the organization sponsoring these examinations and has worked to the benefit of all concerned.

An example of how health department officers and private practitioners do not always see things in the same light was furnished at a recent meeting of the Summer Round-Up Chairmen, Chicago District, Illinois Congress Parents and Teachers Association, where two physicians advocated the examination of pre-school children in the offices of private physicians—that was the policy already adopted by the Parents and Teachers Association. But a representative of the Chicago Health Department advised them to ignore the man in private practice and simply request the Health Department to make the examinations. Fortunately, Dr. Bauer of the American Medical Association was the last speaker, and so was able to tell the Parents and Teachers Association members that the Chicago Health Department stood alone in its attitude and should be disregarded in this respect.

It has been said that the two proper functions of a county medical society are first, presentation of programs to keep its members enlightened on the progress of medicine, and second, education and enlightenment of the public. Practically all activities of this Committee have been centered on these two points.

The work of the Committee can be classed under six heads:

1. Speakers Bureau.
2. Radio.
3. Press Material.
4. General Health Education Service.
5. Cooperating Organizations.
6. Scientific Service Committee.

A partial list of the groups to which speakers have been supplied or with which the Committee has been able to cooperate in some way is as follows:

Illinois Federation of Woman's Clubs.
Rotary, Lions, Kiwanis, and Exchange Clubs.
Parent-Teachers Association.
Churches
Farm and Home Bureaus.
Business and Professional Woman's Clubs.
High Schools, Normal Schools, University of Illinois Extension Bureau.
Boy and Girl Scouts.
Y. M. C. A. and Y. W. C. A.
Groups in manufacturing plants, such as Western Electric, Armour & Co., etc.

The Committee has two checks on the speakers it sends out and on the organizations before which they appear. The speaker is asked to record his opinion of the organization as to attendance, interest, enthusiasm, receptivity, etc.; and the organization is sent a questionnaire in which its opinion of the speaker and his subject is recorded.

A package library is maintained, which supplies to any physician material to aid him in the preparation of a paper or talk.

On November 5 and 6, 1928, over 16,000 high school students heard health talks given by physicians in observance of Health Day of American Education Week. Health articles were prepared in the office of the Committee and released regularly to Illinois newspapers in counties where they were desired by the county medical society. They appeared over the signature of the county medical society.

In the year ending May, 1929, 190 new educational articles were written and approved by the Committee; 10,275 press articles were released to Illinois newspapers; 37 talks were given at teachers' institutes; 26 health talks were given before high school students. During Health Week 19 speakers were scheduled for one county.

In the year ending May 1, 1931, 553 talks were given before lay groups. During the same year the Committee supplied 26 folders of material on the subject of State Medicine for college debating teams. In 1931 about 100 newspapers gave health columns over the signature of local county societies or the Illinois State Medical Society.

In 1932 the Chicago Board of Health included in its report to the United States Chamber of Commerce, a résumé of the work of the Education Committee.

In the year ending May 1, 1933, 11,055 articles were released to newspapers; 1,156 articles concerning topics designated for Health Week were released in April, 1932. One hundred and twelve popular health articles were written and approved by the Committee. Eighty-four newspapers were sent a special article telling the story of the National Institute of Health. Five hundred and sixty-one radio talks were given over stations WAAF, WGN, WJJD and KYW. The following requests for various materials were received from outside the state:

Toronto, Canada, Director of Public Health Education and Deputy Minister.
Norfolk, Virginia.
Manitou, Colorado.
Walla Walla, Washington.
Jackson County, Kansas City, Missouri.
Honolulu.
Davenport, Iowa.
Clinton, Iowa.
Ottumwa, Iowa.
Pennsylvania State Medical Society.

The year ending May 1, 1934, the Committee used radio stations WGN, WJJD, WAAF and KYW. Two hundred and twenty-seven health talks were broadcast as part of the educational programs of these stations. Copies of radio talks were furnished LaSalle County Medical Society for use over a local station.

The year ending May 1, 1935, almost daily lectures were given at the Century of Progress. The Committee busied itself in combatting the campaign of the anti-vivisectionists. In this year the Committee used stations WGN, WBBM, WJJD and WAAF. A total of 254 talks were given. One hundred and thirty-nine libraries were on the mailing list. There were 14,592 newspaper releases.

For the protection of the Committee and of the radio station itself, each speaker is requested to submit a copy of the paper he expects to read. This paper is censored by at least two members of the Committee. Subjects on which there is a material difference of opinion in the profession are not discussed. Treatment is not discussed except in the most general terms. Speakers do not exploit themselves.

In releasing press material to papers, the intention is to make the articles timely; for example, if an epidemic of any sort is prevalent in a county, informative material on that disease is supplied to the local papers.

During legislative years considerable assistance has been given the Legislative Committee.

In July of 1936, the Committee began to use window exhibits in Marshall Fields.' The manager of the building supplied the window space free of rental and service. The exhibits have covered the following subjects: Fourth of July Accidents, The Circulatory System, Cancer, Foot Disorders, Immunization, History of Surgery and Anesthesia, The Heart and Bronchoscopy.

Hay fever had become a very popular subject. The Committee, through the Daily News and the Chicago Tribune, furnished daily pollen counts during the summer of 1936-1937. The counts were furnished by a member of the Chicago Society of Allergy.

Four hundred and fifty-six popular programs were given before lay organizations. State Medicine was a subject of popular interest and the Committee arranged about one program a week on that topic. Individual students and High School Forums requested speakers and material on State Medicine.

Exhibits were arranged for the Annual Meeting of the Illinois State Nurses Association, the Illinois Federation of Woman's Clubs, the Wilson and South Chicago Y. M. C. A.'s, the Joliet Township High School, Central Y. M. C. A. of Chicago, and the Summer Round-Up Chairmen of the Illinois Congress of Parents and Teachers. The American Medical Association exhibit on quackery has been very popular.

Six thousand eight hundred and thirty-two copies of health articles have gone to public libraries, WPA workers, leaders of Red Cross groups and Home Bureau Advisers. Public libraries were supplied with material for bulletin boards and reference.

Programs on Maternal Welfare have been arranged for women's clubs, study groups, Parent-Teacher Associations, Home Bureau units and American Legion Auxiliaries. Articles on the importance of care of the expectant mother have been released to newspapers, libraries and study clubs. Radio talks have been given on the importance of pre- and post-natal care. Programs for county medical societies in the field of obstetrics and pediatrics were prepared. Through the office of the Educational Committee contacts with officers of county societies were made for the Field Representative of the Maternal Welfare Committee. Fifty-eight speakers were secured to present programs for eight county societies during the spring months.

Up to April 1 this year (1938) 260 radio programs, the majority of them in dialogue form, have been given over Chicago stations. These radio talks have been furnished to Danville, East St. Louis, Decatur and Bloomington.

Monthly health exhibits have been held in the Marshall Field & Co. Annex Building. There were large exhibits at the Chicago Dental Society Midwinter Meeting, which was attended by more than 10,000, and an exhibit at the Midwest Physical Education Conference in Chicago.

Four hundred and seventy-two lay people, including Home Advisers, Farm Advisers, School Teachers, Parent-Teacher Association members, Women's Clubs, etc., are on our mailing list receiving material every week, and in addition 120 public libraries receive material every week. Two hundred and twenty-one newspapers are using the health column written and released through the Educational Committee.

From April 1, 1937, to April 1, 1938, there were 471 lay meetings. Scientific programs were arranged for 68 medical societies. Three hundred and twenty-seven scientific papers were scheduled before these groups.

Work has continued along these lines. The central theme of the Committee has been to further the welfare of the profession and the public as a matter of enlightened self-interest, somewhat on the basis that the better one serves, the better he is paid. It might be called enlightened altruism.

It speaks well for the skill and efficiency of Miss McArthur that while the appropriation for this Committee decreased from $14,381.53 in 1926-27 to $8,351.86 in 1936-1937, its activities greatly increased and in addition it did much office work for the Maternal Welfare Committee and paid the expenses and a small honorarium for the speakers sent to county societies by the Scientific Service Committee.

Since August, 1937, the Committee has been seriously handicapped because of the illness and enforced absence of its chairman, Dr. Ferguson. He is said to be improving in recent weeks and we are hopeful that he will soon be able to resume his place as head of the Committee.

DISCUSSION

Dr. Harlan English, Danville: About 15 years ago the State Medical Society deemed it necessary to have an educational committee, which changed its name a time or two, for the education of the lay group on

medicine. It seems to me that each county society should avail itself of the experience this medical educational committee has had in 15 years' experience. Our experience in my own county has been that the press and the lay groups are quite interested in medicine. All you have to do is to stimulate them a little bit and you will have more on your hands than you have time to do it. We have one newspaper. Each time the county society meets, a reporter is there. He takes down things of interest. Sometimes the doctors don't like it because their names are in the paper in connection with the singing but that doesn't hurt anybody. But it has made medicine and the physician something in that community. The next morning after the meeting our publicity committee gets together and writes a brief article for lay consumption on what the men had to say, irrespective of whether it is the treatment of cancer or gonorrhea. We get about a seven or eight-inch column in the paper in a very choice location, and they are read because the editor receives questions about them. We talk on the radio. We are furnishing talks through women or men lecturers about all kinds of subjects. And, when Dr. Hutton stated that he got questions from everywhere, that is true. We have a small radio station, and we use about thirty minutes a week on it. The people write in for all kinds of information. The radio people tell us that for each letter received there must be between 500 and 750 people listening. I don't know how many people actually do listen; so, I think we are doing some good. I think each county society should have a committee on publicity. The Parent-Teachers organizations are always interested in health programs. If the county society can adopt a policy suited to their individual community needs and have a committee that will talk to lay groups and make it their business to do so, or have a local society speakers' bureau; if such is good enough for the State of Illinois, it's good enough for any county in the state. I think our program has been more or less a success, and I think it can be extended to each county group, for they should take an interest in the lay groups. You can mold their opinions very readily if you have the right type of speakers' bureau and go to them with the right type of program.

Dr. Hutton: I have nothing to add.

SUBCUTANEOUS INJURIES OF THE ABDOMEN

FREDERICK CHRISTOPHER, B. S., M. D.

Associate Professor of Surgery, Northwestern University Medical School; Chief Surgeon, Evanston Hospital.

EVANSTON, ILLINIOS

The lives of many patients with severe intra-abdominal injuries without penetrating wounds have been saved by timely operation. In many cases, however, surgery may be unnecessary or in fact even harmful. The diagnosis can be very difficult and it is timely to examine all the criteria which are helpful in making it.

Read before Section on Surgery at Springfield, May 17, 1938.

An abdominal injury may be so severe as to cause immediate death probably from trauma to the solar plexus.[1] Usually it is possible to obtain some history which indicates the possibility of subcutaneous abdominal injury. The most suggestive cases are those in which a heavy crushing force has been applied to the abdomen. An automobile or wagon has passed over the patient's body; his abdomen has been between two heavy objects or caught in an elevator door; or he may have sustained a forceful blow in the abdomen by the kick of animal or man, the blow of a fist, or a heavy missile. In these instances the history is often confirmed by the finding of an abrasion or contusion on the abdomen usually on the unprotected space below the rib basket. In other cases the history will be indefinite but always will contain an incident of violence. Auto accidents, accidents incurred in football, baseball, coasting, skiing, boxing and the like may be responsible. Falls from a height may cause intra-abdominal injuries. Lewis and Trumble[2] report a ruptured spleen after a fall of three stories. And finally, muscular violence, such as sneezing, may be an etiological agent.

Often the patient seen immediately after the accident is in shock. In such cases the extremities are cold; the pulse is of poor quality and may be increased in frequency; the blood pressure is low; the face is pale and the expression anxious. This shock may be so marked as to require immediate and energetic treatment, leaving all but the briefest physical examination until the measures directed against shock are well under way. External heat, fluids, blood, morphine, and rest will usually but not always ameliorate the primary shock. The injury may be so severe that the patient will die in a very short time despite all treatment.

Case 1. G. B., a strong man of 31 had felled a tree which struck him strongly in the right abdomen. On admission to the Evanston Hospital some twenty minutes later there was marked abdominal rigidity. The pulse was weak and fast and the extremities were cold. The patient was conscious and in severe pain. He died twenty-three minutes after admission to the ward despite anti-shock measures. Post mortem examination showed the right lobe of the liver to be torn three-fourths of the way through.

At first, pain may be absent or relatively

slight,[12] only to become increasingly evident after some hours or even days. Hanchett[3] reports a fatal case of a complete transverse division of the jejunum in a patient who at first was thought to be only slightly injured. In Sommer's[4] fatal case there was no certain sign of abdominal injury until the fifth day. The patient may even walk a considerable distance after his injury.

Case 2. W. D. At one p. m., this ten year old boy was struck on the left side of the chest by the bumper of a truck. He was brought to the accident room of the Evanston Hospital where a careful examination showed an abrasion in the left axillary line at the level of the 8th rib. There was a lacerated wound of the scalp. The patient had little if any pain and sat up and moved around with no evident discomfort. There was some abdominal rigidity. Seven hours later the pain and rigidity had markedly increased and during this time the patient had shown increasing reluctance to move about. The leucocyte count was 28,000. At operation the spleen was found to be broken into several pieces through the hilum. The spleen was removed and the patient recovered despite a complicating bronchopheumonia.

Case 3. E. L., a tall sixteen-year old boy while running at top speed tripped and fell striking his abdomen against the steel rail of a railroad track. He got up and took the train, but had to get off very soon because of dizziness and nausea. When seen shortly afterward he was in marked shock with abdominal rigidity. On admission to the Evanston Hospital his pulse was 84 and the leucocyte count was 24,700. Laparotomy disclosed a ruptured enlarged spleen which was removed. The patient made an uneventful recovery.

Usually, abdominal pain is a marked symptom and may be of agonizing severity requiring morphine for its control.

The patient is at times most reluctant to move or he may be, on the other hand, astonishingly active, and sit up on the examining table without effort or discomfort.

Abdominal rigidity may be entirely wanting or may be very marked. When rigidity is present it is of course a valuable guide. Tenderness and "rebound tenderness" are usually present, but may be absent. Nausea and vomiting are common.

Case 4. J. McE., a strong boy of seventeen years was fiercely tackled in a football game at 11:30 a. m. He was struck on the left side of the abdomen by a shoulder or head. At one p. m., he walked into a doctor's office and was sent home to bed. Later in the afternoon he reported that the pain, which was somewhat periodic in character, had become more severe. He was then sent to the Evanston Hospital. There the leucocyte count was found to be 13,600. Respiration caused pain and there was tenderness in the left upper quadrant. At nine p. m., the leucocyte count was 19,250. The pulse was 98. Laparotomy at midnight disclosed a ruptured spleen, there being an 8 cm. tear in the midportion through the whole thickness of the spleen. A splenectomy was done and the patient made an excellent recovery.

In the writer's experience any sudden invasion of the peritoneal cavity causes a rapid rise in the leucocyte count. This finding is not confirmed by others. Sommer[4] found that the leucocyte count increased somewhat a few hours after injury, but declined after 12-24 hours. Wangensteen[5] has found the leucocyte count usually to be normal in cases of perforation of a hollow viscus with a slight rise in cases of hemorrhage.

By this time the history, the symptoms, or the physical findings will have indicated the possibility of an internal injury. *The next step is the roentgen examination* in order to determine, if possible, whether or not there has been a rupture of some portion of the gastrointestinal tract.

Case 5. A boy of fifteen years sustained an abdominal blow from the knee of another player in a football game.[5] After walking home he vomited several times and began hiccoughing. There was no particular pain, little tenderness, some rigidity of the recti abdominalis. The leucocyte count was 29,550. The patient easily stood before the x-ray machine, and the film showed a crescent of air beneath the diaphragm on both sides. Operation two hours later and five hours after the accident disclosed a 1 cm. perforation of the jejunum; this was closed and the patient made a rapid recovery.

In 1915 Popper[7] noted that in patients with a ruptured stomach or intestine who were x-rayed in the vertical position a sickle or crescent-shaped gas accumulation appeared over the liver and under the diaphragm. If the patient is too ill to stand, the x-ray may be made with him on his side and the gas bubble will appear at the top. This demonstration of pneumoperitoneum is pathognomonic of the rupture of a hollow gas-containing viscus. Injury to a hollow viscus is usually from a bursting mechanism. Unfortunately the absence of pneumoperitoneum does not entirely exclude rupture of the intestine.[5] If pneumoperitoneum is demonstrated after a subcutaneous abdominal injury, operation is mandatory and should be carried out as soon as the patient's condition will permit, but in no event should it be delayed more than six hours after the injury because of risk of peritonitis.

When there is absence of pneumoperitoneum, rupture of the gastro-intestinal tract is practically excluded, and it is permissible to defer operation and observe the patient closely at half-hour intervals. The most important factors are now the pulse rate, blood pressure, pain and distention. If the patient does not recover from his primary shock, operation, as a desperate measure, may be indicated. The degree and persistence of shock may be regarded as an index to prognosis.[1] If the patient rallies from his primary shock and then the pulse rate steadily increases, intra-abdominal hemorrhage may be inferred. Intravenous administration of blood, gum acacia, saline solution or dextrose Ringer's solution may decrease the pulse rate and improve the blood pressure, but if this is temporary, operation should be carried out in an effort to check the hemorrhage.

If the abdominal rigidity, tenderness, and distention increases in one to two hours, exploratory operation is indicated.[8] When the systolic blood pressure has returned to 80 to 100, the operation may be begun. A decision as to operation should be made by six hours if possible, and even this is rather late.[10, 11] Deaver[12] regards rigidity as so significant that operation is indicated on that finding alone. This must not, however, be confused with the spasm from trauma limited to the wall. Summers[13] said, "too much valuable time is spent in analysing symptoms in order to determine in a given case whether or not an intra-abdominal injury has followed trauma."

Before operation is undertaken it will be well, if the patient's condition permits, to attempt to determine which organ is involved. Solid organs are about twice as frequently injured as hollow ones. The predominance of symptoms in the upper left quadrant suggests the spleen; in the upper right quadrant, the liver. As Robertson[18] points out, the limiting membrane of the spleen is fragile, and accordingly that organ is more commonly ruptured than the liver or kidney. Enlarged spleens and livers are more vulnerable than those of normal size. If the pain is in the lower abdomen the urinary bladder must be considered. The over-distended bladder is most susceptible to injury. A lesion of the urinary bladder is suspected if there is lower abdominal pain, vesical tenesmus, bloody urine, or inability to urinate. Vaughan and Rudnick[14] have shown that a positive diagnosis of rupture of the urinary bladder may be made by the x-ray taken after injection of air into the bladder. This method will show not only the presence or absence of a rupture, but if one is present, whether it is intraperitoneal or extraperitoneal. De Tarnowsky[15] has emphasized the danger of delay in operating upon these cases. He studied 50 cases and found 35 to be of the intraperitoneal type with a mortality of 48 per cent and 15 to be of the extraperitoneal type with a mortality of 42 per cent. The diagnosis in these cases is often obscured by multiple injuries. Culver[39] says that prompt surgical treatment is more important than the determination of the exact extent of the lesion.

Of particular importance is to determine, if possible, if the injury is limited to the kidney, because operation is rarely indicated in these cases.[3] Allen[16] studied 39 cases of kidney injury at the Massachusetts General Hospital and found that in the 25 cases not operated upon there were 25 recoveries, while in the 14 cases operated upon there were four deaths. Davis[9] says that in kidney injuries there is little pain if the capsule is torn and great pain if the capsule is intact. After a few days ecchymosis may appear in the flank, inguinal region, or scrotum.[23] Of course a few cases of kidney injury will require surgery for continued hemorrhage or later for infection. The diagnosis of kidney injury is made from the site of the contusion and the pain, and the finding of blood in the urine. In the cases of kidney injury reported by Lewis and Trumble,[22] 21 were treated conservatively with a mortality of nine per cent. and nine were operated upon with a mortality of 33 per cent. An intravenous urogram may give considerable aid.[5] These cases are best treated by rest in bed and sedatives for pain. Meyer[17] keeps the patient in bed for one week after the red blood cells have disappeared from the urine.

A simple contusion of the abdominal wall may be more painful than a visceral lesion before peritonitis sets in (de Tarnowsky[19]). Rupture of the rectus abdominis muscle is uncommon, but usually occurs below the umbilicus. The posterior sheath of the rectus is missing in its lower portion. Cullen[20] points out that when blood lies between the rectus muscle and the peritoneum, the symptoms are usually those of an acute intra-abdominal lesion. A retroperitoneal hemorrhage will always cause symptoms of an acute intra-abdominal injury, and such cases are al-

most always subjected to exploratory operation.[21,33]

Case 6. A 58 year old man was admitted to the hospital shortly after he had fallen from the roof of a building on which he was at work.[24] As he fell his body struck the projecting corner of a low shed; the direct impact was against the lower half of the abdominal wall on the right side.

He was admitted to the hospital shortly afterward, pale, with rapid pulse and a median tumor of the lower abdominal wall which had all the appearance of an overdistended bladder. Catheterization of the bladder yielded 200 c.m. of normal appearing urine. During examination of the patient and the catheterization the intern noted that the tumor increased definitely in size.

Immediate abdominal incision disclosed a mass of blood and clots between the rectus muscles and the underlying peritoneum, due to a complete rupture of the right inferior epigastric artery. After the bleeding had been arrested the peritoneal cavity was opened; there was no sign of intraperitoneal injury. Uneventful recovery followed.

There are doubtless many instances of injuries to the liver in which the bleeding is controlled spontaneously and operation is not indicated on the basis of signs of increasing hemorrhage. Hinton[21] and Beekman[24] advise conservative measures in spleen injuries in children. One must be on guard, however, for not only those cases of hemorrhage which occur rather rapidly, but also for those which come on insidiously as reported by Reid.[25] The mortality in ruptures of the liver is well over 50 per cent.

Case 7. A girl of twelve fell on a blunt picket fence.[20] Shortly afterward she was in marked shock with a pulse of 170, great pain in the upper abdomen, and an abrasion just to the right of the xiphoid process. At the hospital soon after the accident her pulse was 100, but rose steadily over eight hours to 150. A blood transfusion and gum acacia brought the pulse down to 110, but in a few hours it was back to 146 and an exploratory laparotomy was carried out. An extensive rupture of the liver was found and the bleeding controlled by a gauze pack. After a stormy convalescence including operations for a subphrenic abscess and two intestinal obstructions the patient recovered.

The jejunum is probably the portion of the gastro-intestinal tract which is most commonly injured,[27] although no part is immune from injury. Butler[25] reported a case of contusion of the upper abdomen which caused a rupture 5 cm. long of the anterior surface of the rectum, and Davis[29] reported a bursting rupture of the retroperitoneal portion of the duodenum which recovered after operation. The mortality in intestinal injuries varies from 9.9 per cent. to 87.5 per cent. in different reported series.[22] In Allen's[16] 41 cases of injury to the gastro-intestinal tract, 36 involved the small bowel. All of the 41 patients were operated upon and 22 died. It is of interest to note that trauma may quite definitely be a cause of gastric or duodenal ulcer.[30, 31]

In cases of suspected intraabdominal hemorrhage it is usually best to defer transfusion until the operation is begun. On opening the abdomen in a subcutaneous abdominal injury, blood only may be encountered. As Lejars[32] points out, this blood may come from a tear in the omentum, the mesentery, the mesocolon, the gastrohepatic omentum, or the gastrosplenic omentum; from the rupture of the liver, spleen, pancreas, or even kidney; from the rupture of a large vessel; and finally from an incomplete rupture of the stomach or intestine. The surgeon will quickly find the source of the bleeding. Often he will discover a wound in the liver from which the bleeding has stopped, in which case he will carefully avoid touching this area or handling it in any way as fresh bleeding might result. If there be fresh bleeding from the liver the wound will be packed with gauze. Wounds of the spleen are best treated by splenectomy. Hemorrhage from the omentum and mesentery will be stopped by ligation. In cases where the damage to the mesentery is extensive, the affected bowel will be resected. Injuries to the pancreas may be treated by packing. In all cases where there has been severe hemorrhage, transfusions should be given.

If intestinal or gastric contents is seen on opening the abdomen, the injury will be found and repaired. Free bile in the peritoneal cavity signifies injury to the gall bladder or bile ducts. A cholecystectomy or repair of the bile duct with drainage may be indicated. Wangensteen[5] does not believe that the presence of sterile bile in the abdominal cavity is dangerous.

The treatment of bladder injuries consists in closure of the tear in the bladder by suture, drainage of the cul-de-sac or prevesical space, and the use of an indwelling catheter.[15]

Summary

All patients having a history of violent injury to the abdomen or any severe violence involving the body in its entirety, as a fall from a height or an auto accident, should be suspected of having

serious intra-abdominal injury. The presence of shock increases this suspicion, but the absence of shock does not exclude it. Treatment of the shock, when present, is the first consideration. If the patient recovers from his circulatory collapse, he should be studied with the greatest care in an effort to decide if operation is indicated. Positive indications for operation include the demonstration of pneumoperitoneum by x-ray, the roentgen demonstration of extra-vesical air after injection of air into the bladder, steady increase in pulse rate and fall of blood pressure despite intravenous fluids, and increase in pain and rigidity. Potentially fatal injuries will often give little if any symptoms and the surgeon's judgment will be seriously taxed. These patients must be carefully examined every half hour. In cases of serious doubt the exploratory laparotomy is the best course.

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SUBCUTANEOUS ABDOMINAL INJURIES
EVANSTON HOSPITAL

Organ	Operated on	Died	Not Op.	Died	Tot. Cases	Died	Mortality
Spleen	6	2	0	0	6	2	33.33%
Liver	3	2	2	2	5	4	80. %
G I	3	2	0	0	3	2	66.66%
Bladder	5	1	1	1	6	2	33. %
Kidney	2	0	5	1	7	1	14. %
Splenic Vein	1	1	0	0	1	1	100. %
Pancreas	1	0	0	0	1	0	0. %
Desc aorta	0	0	1	1	1	1	100. %
	21	8	9	5	30	13	43.00%

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INJURIES TO THE RIGHT UPPER ABDOMINAL QUADRANT

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CHICAGO

In this quadrant of the abdomen injuries occur to the liver, kidney, stomach, small intestine, pancreas and large intestine in the order mentioned. My discussion will include.

1. Injuries to the abdominal wall.
2. Injuries to the blood vessels of the abdominal wall and abdominal cavity.
3. Injuries to the viscera.
4. Involvement of the bony structures.
5. Injuries to the nerves, more particularly the iliohypogastric, ilioinguinal and solar plexus.
6. Traumata of the omentum and mesentery.

Certain types of trauma predispose to specific injuries of viscera. For instance, trauma over a circumscribed area is more apt to injure the kidneys and intestines, while a direct force distributed more diffusely over a wider area is more apt to injure the liver, pancreas, stomach and blood vessels. In certain parts of the right upper quadrant organs such as the liver are protected by the ribs and heavy muscless of the loin and abdomen. The kidney, unless the blow is applied laterally, is protected by the heavy muscles of the loin and by the spine. In the anterior portion of the abdominal wall the linea alba and the linea semilunaris are said to be the weakest or thinnest portion to which trauma may be applied. There is a triangle which is bounded by

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the ribs on either side and the apex of which is the ensiform cartilage, the base being formed by a line drawn between the cartilaginous attachments of the last ribs. This triangle is not well protected, and trauma in this area, whether from a direct or indirect blow, may cause great distress and even death by reason of the extreme shock to the solar plexus. When the viscera are engorged and the stomach and intestines are partially or completely filled, there is a definite predisposition to injury. Pathology in the liver, kidney, stomach and duodenum makes these organs more vulnerable. The viscera of the young are much less apt to become traumatized than those of persons of advanced age. The well developed abdominal and lumbar muscless of the worker and the athlete protect the organs very materially.

Penetrating wounds of the abdominal wall, whether from a bullet or a sharp weapon, must always be very thoroughly examined. If there is any doubt as to whether the missile penetrated into the peritoneal cavity, an immediate laparotomy is indicated. A painstaking examination is necessary, during which the general and the local sensitivity of the abdomen, the pulse, the fascia—in fact, every sign must be watched.

It must be remembered that the fascia and even the bellies of the muscles are apt to divert the course of the bullet or sharp weapon. A careful history as to the direction of the missile as it entered the abdominal wall must be elicited. I have seen one case in which the bullet entered the right loin and, without penetrating through into the peritoneal cavity, passed entirely outside the fascia planes and was found to lie subcutaneously in the opposite groin.

In the doubtful cases when a careful non-traumatizing laparotomy has been performed and it is found that there is no penetration or perforation of the viscera, no definite harm has been done.

Jaki[1] distinguishes three clinical stages following abdominal wall, as well as visceral, injury: 1. shock, 2. transient subjective improvement, 3. in cases of hemorrhage, collapse; and in cases of injuries to hollow organs, peritonitis. In his opinion symptoms of shock usually appear immediately after the injury due to mechanical influences acting by way of circulatory disturbances in the autonomic centers of the medulla oblongata, by irritation of the subserous vagus and splanchnic ends and the sensory spinal nerve ends in the abdominal wall. This lasts from one to three hours. He thinks that a longer duration indicates a permanent serious injury of nerve ends. He states that when an injured person is seen immediately after an accident, it should be possible to decide within three hours whether there is a real abdominal injury and states furthermore that an operation is indicated even during the stage of shock if the patient is getting visibly worse. Meyer and Shapiro,[2] however, state that no patient should be subjected to laparotomy until proper preparation has brought the blood pressure above 80 unless the operation is one of "last resort."

Injuries to the abdominal wall may produce ruptures of the muscles, diastasis or hernia, but more often there is a sufficient injury to the blood vessels of the wall to permit of the formation of a hematoma. The shock from a hematoma even of small size may be quite as severe as that of a bruise to the underlying viscera. Posteriorly, such a force may cause retroperitoneal hemorrhage with or without injury to the kidney.

Injury to blood vessels alone may involve those of the abdominal wall or those of the viscera. Large blood vessels within the abdomen and especially those in the mesentery are often injured by stab wounds and gun shot. Bleeding into the capsule of the liver or kidney or into the wall of the stomach occurs frequently without rupture of the capsule of the organs or the peritoneal covering of the intestines and stomach. If the hemorrhage stops, there is usually early and complete recovery. If, however, a fair-sized vessel has been injured, surgical interference may be demanded.

In visceral injuries, as I stated in the beginning, the liver is probably most commonly involved despite the fact that it is well protected by the ribs. They may include hemorrhage into the liver, injury to the biliary tracts, injury to the extra biliary bile ducts, or rupture of the liver. Lewis and Trimble[3] report a series of twenty cases of rupture of the liver with a mortality of forty per cent even after operation. Diagnosis of such an injury may be made only after one has obtained a history of definite trauma over that area, symptoms of internal hemorrhages, and localized tenderness and rig-

idity in the right upper quadrant. I think that every one agrees that when it is possible to make a diagnosis of ruptured liver, an operation should be done immediately. This should consist of packing with gauze or some other material, following which drainage should be instituted. The prognosis in the uncomplicated cases will depend upon the early diagnosis and operation and the control of hemorrhage.

Injury to the kidney involves the perirenal structure by hemorrhage or produces a subcapsular rupture or a transcapular tear with or without involving the pelvis of the kidney. The symptoms include shock and collapse, hematuria, tumor mass in the region of the kidney, tenderness over the area and muscular rigidity. When all of these cardinal signs are present and when there is a history of injury over the kidney area, the diagnosis should not be so difficult. Many authors advise expectant watching in these cases unless there is marked urinary extravasation and continued hematuria, both of which may indicate injury to the renal pelvis or to a calyx. When the tumor in the region of the kidney increases in size rapidly, an immediate exploratory operation is advised.

Ritvo and Stearns,[4] discussing roentgen diagnosis of contusions of the kidney, state that the x-ray is of great diagnostic value in contusions of the kidney with or without severe tears or rupture of the renal structure. They state that injuries of the kidney vary from slight trauma to very severe rupturing or tearing wounds and can be classified according to extent and location of pathologic changes as follows: 1. edema of the renal or perirenal tisssues, 2. extracapsular hemorrhage involving the perirenal fat and fascia, 3. tears of the capsule and perirenal tissuses, 4. subcapsular tears varying from single fissures to marked fragmentation, 5. laceration of the parenchyma, capsule and perirenal tisssues and 6. injuries to the pedicle, with rupture of the blood vessels or ureter or both. The flat x-ray film may occasionally give helpful information and can often be made when the severity of the injury precludes more detailed studies. Some or all of the following signs may be demonstrable and assist the physician in arriving at a diagnosis: 1. haziness, or apparent enlargement of the renal shadow, 2. absence or blurring of the outline of the psoas muscle, 3. fixation or limitation of mobility of the kidney, 4. fracture of the lower ribs or transverse processes of the lumbar vertebrae and 5. scoliosis. A variation from the normal in the course of the ureter is said to be significant. In cases of contusion of the kidney this organ is pushed toward the vertebral column forming an arc, and in some instances may overlie the bodies of the vertebrae. The calices and infundibula become compressed and distorted, in some instances seeming almost spiderlike.

The literature contains many articles upon injury to hollow abdominal viscera, principally the stomach, duodenum and intestines. Vance[5] believes that injuries of hollow abdominal viscera are unlike those of parenchymatous organs and states that they are much less frequently injured because they tend to elude the action of the force. The mobility of the segments enables them to escape the consequences of the trauma and it is only under certain circumstances that they are especially prone to rupture. He thinks that there are three ways in which these organs can be affected by violence: 1. by crushing or contusion, 2. by tearing, 3. by bursting or explosion.

In my experience I have seen just one rupture of the stomach and this was in the anterior wall. A man 45 years of age returned to his work at a bench in a saw mill immediately after having eaten his dinner. A large block of wood was forcibly thrown against his upper abdomen and the patient was knocked over backwards. He was brought to the hospital within an hour and even at that time a fair-sized hematoma had formed in the right rectus muscle just above the umbiliens. The patient was in extreme shock with rapid pulse and all the findings which follow immediately after a ruptured viscus. Operation was done at once and a ragged 3-inch tear was found in the anterior stomach wall with the abdominal cavity practically filled with stomach contents. An immediate suture was made, drainage was instituted, shock was treated and the patient made an uneventful recovery and left the hospital at the end of three weeks.

In another case, the patient, a young man about 30 years of age, had taken copiously of beer. While standing at the bar, he became engaged in a more or less unfriendly fist-fight and was struck in the region of the epigastrium. He collapsed immediately and was taken to the hospital. Immediate opening of the abdomen re-

vealed a ruptured ulcer one and a half inches proximal to the pyloric ring. The abdominal cavity was found practically filled with stomach contents, principally beer. A suture of the ruptured ulcer was made and the patient made an uneventful recovery. Subsequently a history of stomach ulcer was elicited from the patient.

The third such case to come under my observation was a man aged 60 who was in an automobile accident and sustained a moderate injury to his epigastrium, presumably from the steering wheel. He did not report to a physician until two days later when he complained of discomfort, weakness and slight distention of the abdomen. In the absence of marked rigidity or any other sign of shock, the patient was carefully watched. X-ray films were made and air was shown under the dome of the diaphragm above the liver. This patient was treated expectantly. No food was given by mouth. After a number of weeks, his condition having improved, an x-ray film was made of his stomach, which showed the presence of a fair-sized ulcer in the region of the pylorus. This man was put on ulcer management and made an uneventful recovery without operation.

We believe it is very important, even in younger individuals, to obtain from the patient or his family a history of previous stomach complaints. We know that these ulcers rupture spontaneously, but any injury or blow to the upper abdomen is apt to rupture them immediately. When the patient is in shock, nothing more should be done than a closure of the ulcer opening unless this too greatly constricts the pyloric outlet. Secondary operation may be indicated when the patient's condition warrants it. In all injuries to the stomach it is necessary to keep in mind that a rupture in the posterior wall may also take place with escape of stomach contents or hemorrhage into the lesser peritoneal cavity.

Marianan[6] reported a case of posttraumatic rupture of the jejunum in a young man who had fallen over some rails. Examination of the abdomen showed no evidence of injury. There was some rigidity. Slight pain in the epigastrium radiated toward the right shoulder. About an hour after he was admitted to the hospital he vomited once and felt better, but the abdominal rigidity persisted. Laparotomy was performed and the peritoneal cavity was found to contain a large quantity of brownish fluid. Further investigation revealed a large tear in the jejunum about six inches below the duodenojejunal flexure. The bowels showed almost complete separation. The rupture was sutured and the abdomen closed with drainage. Convalescence was uneventful and the patient made a complete recovery. Marianan calls attention to several interesting features: 1. that rigidity was the only sign present, 2. that shock was entirely absent, 3. that pain was slight, 4. that vomiting occurred only once, and 5. that septic peritonitis did not supervene.

Injuries to the pancreas occur more often than is generally supposed, six cases being reported in the recent literature. Robertson[7] states that this is evident from the number of patients with abdominal injuries that develop glycosuria at some time during their convalescence. The absence of the usual symptoms of pancreatitis is accounted for by the fact that the pancreatic damage is limited in most instances to a slight contusion of the gland. A cross section of the abdomen at the level of the pancreas impresses one with the excellent anatomic protection of that organ. Certainly trauma from the anterior surface of the abdomen would have the most likelihood of damaging the pancreas, but the interposition of other tissue will dull very sharp blows and by the time the force reaches the pancreas most of its energy is spent. He states furthermore that there are instances of extensive pancreatic damage from rather trivial blows and cites the case of a butler who died as the result of a fall against the edge of a table. The primary damage was slight, but it inaugurated a chain of events which was fatal. He admits that in most instances the injury to the pancreas is a slight contusion but that extensive hemorrhage may follow with extravasation of blood, eroding the gland and assumulating until the limits of the capsule are reached. Such a course of events causes excruciating pain and shock, and where the capsule of the pancreas ruptures there is immediate flooding of the lesser peritoneal cavity and retroperitoneal space along the posterior abdominal wall with highly irritative material. With this spilling of digestive ferments there is a digestion of surrounding tissues and further destruction and hemorrhage.

Bennett[8] reports the case of a male aged 53 who was caught between two freight cars with severe injury to the upper abdomen. Diagnosis

of abdominal hemorrhage or perforation could not be made; consequently no operation was performed. However, the patient became rapidly worse and died and at postmortem the examination revealed a complete transverse rupture through the body of the pancreas where it crosses the spinal column. There was no injury to any other viscus.

I have not seen a traumatic rupture of the duodenum except in cases of ulcer. Cooke[9] reported three cases of rupture of the duodenum in a series of 210 automobile accidents. In this same series he found rupture of the jejunum in six cases, of the ileum in two and of the ascending colon in one. He stated that in three cases rupture of the intestine was associated with rupture of the stomach. Inlow[10] reported six cases of secondary or late perforation of the small intestine from trauma and stated that secondary perforation results from necrosis and sloughing of a small area of the intestinal wall on the antimesenteric border.

Injuries to the nerves are caused by lacerating or penetrating wounds and gun shot wounds and only occasionally by severe compresssion trauma. Such injuries are usually associated with trauma to other organs.

Summary: 1. It is my firm conviction that all perforating wounds of the abdominal wall should be operated at the earliest possible time.

2. Where there has been a severe injury to the right upper abdomen every effort must be made to differentiate between mild trauma and severe injury to the intestines or other organs.

3. The diagnostic aids, in addition to the clinical signs and symptoms, must include blood and urine examination, x-ray examination to determine the presence of air in the abdominal cavity, and a repeated careful blood pressure examination. When the blood pressure goes down and the pulse up so that the rate is interchanged, shock hemorrhage or both must be present and every effort should be made by the means at our command to raise the blood pressure sufficiently to make it possible to do an exploratory operation.

I realize that I have added little or nothing to our knowledge of traumatic lesion of the upper abdomen.

However, I make an earnest plea for 1. The avoidance of haste, 2. a careful history of the accident, 3. a painstaking differential diagnosis between result and injury, 4. a clean, painstaking and nontraumatizing operation.

I should like to leave you with truths expressed in Bennett's little verse:

'Tis better to use the knife too soon
And find our diagnosis wrong
Than to hear that old familiar tune,
He's gone to join the heavenly throng.

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RUPTURED SPLEEN

Chester C. Guy, M. D.

CHICAGO

In Illinois, ruptured spleen is present in about one of every 3,000 Hospital patients. The incidence will vary from 1 in 2,000 to 1 in 10,000 depending on the type of Hospital and the number of injured patients it receives. The average 200 bed general Hospital will annually admit 2 or 3 patients with ruptured spleens. In Southern states, malaria causes splenomegaly to occur more frequently, and ruptured spleen is not unusual. In India, where malaria is widespread, ruptured spleen accounts for about 3% of all deaths.

A certain number of these patients are moribund on admission, or are suffering from multiple injuries, and die without operation or accurate diagnosis. The majority, however, are recognized as cases of severe intra-abdominal injury and are subjected to operation. Rupture of the spleen has always to be considered in cases of in-

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jury to the left upper abdominal quadrant or to the left lower chest wall. As a rule, considerable violence is required to damage a healthy spleen, but occasionally it is ruptured by comparatively minor blows or falls. Even minor injuries are always of significance when the organ is enlarged or movable, and therefore a history of malaria should be sought for in every case of left upper quadrant injury.

Spontaneous rupture of a normal spleen has been described occasionally, and recently Zuckerman and Jacobi reviewed twenty such cases believed by them to be genuine examples of this condition. They explained it on the basis of a congenital absence of the diaphragmatico-splenic ligament, this lack of support allowing a partial and recurring torsion of the organ, resulting in passive congestion which led to rupture in the absence of any history or evidence of injury. Such lesions are of such rarity that further consideration of them is not indicated in this paper.

Minor injuries to the spleen with small subcapsular hemorrhages or local hematoma formation are probably not uncommon and the patient recovers with little or no treatment. At the autopsy table we frequently see scars of the pulp or capsule and perisplenic adhesions in the absence of other findings in the body which would explain the splenic abnormalities on the basis of old inflammation. Some of these scars are probably due to old injuries which have healed spontaneously.

The majority of splenic injuries are associated with marked intra-abdominal hemorrhage and the mortality is high unless splenectomy is performed early. Their prompt recognition and treatment is therefore of particular interest to those physicians who frequently are called to attend injured persons.

These injuries are of two general types; open wounds as from shooting or stabbing, and the closed or subcutaneous wounds. During peace times only about 20 to 25% of splenic injuries are of the open type. In the last five years, there have been no patients with bullet wounds of the spleen operated at the Cook County Hospital, and only two cases of stab wounds. Other patients were brought in with such injuries but died before operation could be performed. Oberhelman and LeCount studied the records of 343 patients who suffered bullet wounds of the abdomen and found only 19, or 5% of them had wounds of the spleen. In all of these, there were associated injuries to other organs, the diaphragm, stomach, liver, and colon being involved, in that order of frequency. Fourteen of these were operated on and only one survived. The 5 not operated on all died, making a mortality rate of about 95% with bullet wounds of the spleen. With stab wounds there is generally less injury to other viscera and a lower mortality rate is to be expected. The two stab wound cases in this series both recovered.

About three-fourths of all cases of ruptured spleens are of the subcutaneous type. The great majority suffer from severe intraabdominal hemorrhage and 75% of them will die within twenty-four hours unless operated upon. Others will die of hemorrhage or sepsis at a later date and all authors agree that the mortality without operation is very high, about 90%. With operation the mortality is much lower. Michelsson reviewed 298 cases with a mortality of 33.3%. Willis reported 57 treated by splenectomy with a mortality of about 29%. These percentages indicate the saving of many lives by surgery but they are still too high; and the purpose of this contribution is to suggest measures by which the mortality rate can be further reduced.

In the average case of subcutaneous rupture of the spleen there is laceration of the capsule and pulp with marked and continuous intraabdominal hemorrhage. Some walling off of the hematoma with partial cessation of the hemorrhage may occur in a few hours and tends to lull the surgeon into the adoption of conservative treatment, but the hemorrhage usually recurs with any exertion and too many of these patients are operated on later when almost exsanguinated. Gauze packing or tamponade of the splenic laceration has been successful in some cases, and the surgeon is tempted to resort to this procedure when the patient is in poor condition or splenectomy appears difficult. Experience has proven that packing alone generally can not be depended upon to stop the hemorrhage and that the mortality is much lower if splenectomy is done and the large splenic vessels securely ligated. Earlier operation, splenectomy, and blood transfusions can cut in half the present surgical mortality with primary hemorrhages.

There occurs another clinical picture with ruptured spleen, and it is particularly in this type that recognition of the pathology will save lives.

I refer to the cases of late, delayed, or so-called secondary hemorrhages. In these, the primary injury is tamponaded and the hemorrhage checked or the splenic lesion may be overlooked in the presence of other injuries. Several days later a severe secondary hemorrhage from the spleen may occur, present a puzzling clinical picture, and cause death if unrecognized or improperly treated. The cases of primary and secondary hemorrhage will be discussed separately. The latter are considered to be those cases of ruptured spleen in which evidences of marked hemorrhage did not appear until at least 48 hours after the injury. This time period is chosen because the majority of patients with primary hemorrhages have either been operated upon or are dead within 48 hours. As the clinical picture and the diagnostic problems are essentially the same in both primary and secondary hemorrhage, these will be considered in connection with the more puzzling latter type.

A review of the last twenty cases of primary hemorrhage treated by splenectomy at the Cook County Hospital in about the last five years reveals the importance of early operation. Two patients were injured by stabbing, both had perforation of the diaphragm, both were operated within six hours after injury, and both recovered. Eleven others were struck by automobiles, and four were injured by falls. Their ages varied from 7 to 50. Four were correctly diagnosed as ruptured spleen, six were simply called ruptured viscus, and four others were operated for intraabdominal hemorrhage. Five had associated lacerations of the intestines or left kidney and three of these died. One recovered after removal of both the spleen and left kidney. As nearly as could be determined the amount of intraabdominal hemorrhage in this series did not bear a direct relation to the severity of the splenic damage, but it is worthy of note that severe hemorrhage was always present in those cases in which the lacerations of the spleen were recorded as having involved the hilus. In general, the greater the hemorrhage, the higher the mortality, and this was in direct proportion to the interval elapsing between injury and admission to the Hospital. Eleven patients were admitted within eight hours of injury and only two died, a mortality of 18%. The other nine were admitted from 8 to 48 hours after injury, and of these, six or 66.7% died. Of the total number of cases of primary hemorrhage, twenty in all, eight died, a mortality of 40%. This is somewhat higher than the averages in other series, but it does not seem excessive when one considers that almost half of those patients did not come to the Hospital until 8 hours or more after being injured.

At present, the "Blood Bank" arrangement at the Cook County Hospital makes possible early and repeated transfusion of whole blood. It is saving lives that undoubtedly would be lost without this service. If such facilities for blood transfusion had been available during the entire last five years, the mortality rate in this series of patients would have been reduced in all probability.

During this same period, we have records of four patients who were operated on for secondary hemorrhage from rupture of the spleen. Two of these are included with others reported in fairly recent surgical literature and I will shortly show a series of lantern slides illustrating the results in fifty-two such cases. Brief outlines of two cases, personally observed, will serve to illustrate the usual clinical picture in secondary hemorrhage from ruptured spleen.

One patient, a male of 37, was hit by an auto and suffered a fracture of his left radius and a bruise of the lower left chest wall. He walked to the hospital and a cast was applied to his arm. He complained of left upper quadrant abdominal pain with tenderness, but this was improved the following day, and the possibility of intraabdominal injury was then dismissed by his physician. During the next ten days he had some epigastric distress, gaseous eructations, and mild diarrhea; and took soda for relief. Ten days after the accident and while at stool, he suddenly felt a severe abdominal pain and fainted. At the Hospital his physician made a diagnosis of a ruptured peptic ulcer and operated through a right rectus incision. He found the abdomen full of blood and inserted a pack in the left upper quadrant. Autopsy the next day revealed that the patient had bled to death from a rerecent hemorrhage from a previous tear in his spleen.

Another case was quite similar. A girl of nineteen fell on some stairs striking her left lower lateral chest wall. Her chest was strapped and she was in bed for a week. She then was allowed up and returned to work. Fifteen days after the accident she suddenly developed severe left upper quadrant abdominal pain, pain in the left shoulder, nausea; and rapidly became weak. At the Hospital, abdominal tenderness and rigidity, a mass in the left upper quadrant, and evidences of intraabdominal hemorrhage suggested the correct diagnosis. X-ray further supported this. Her condition was critical with a pulse of 160, but she was operated through a left rectus incision with lateral ex-

tension, and splenectomy rapidly done. Her abdomen was full of blood, and she failed to rally in spite of blood transfusions, and died several hours later.

In 1929, McIndoe in the *British Journal of Surgery,* published a splendid article on this subject of secondary hemorrhage from the spleen, and reviewed many cases up to that date. The most significant feature of these secondary hemorrhages is the latent period which occurs between the injury and the onset of the severe hemorrhage. During this interval, the original abdominal or chest injury may be forgotten, especially if other and more serous injuries also exist. This is well illustrated in the first case report cited. The symptoms during this latent period and the diagnostic features of the condition can perhaps best be considered by means of a series of lantern slides, which also illustrate other points of importance in connection with rupture of the spleen.

Slides—to be shown in this order.

1. Normal spleen—Defenses and vulnerability.
2. Anatomy—cross section.
3. Pathology of splenic injuries.
4. Healing of small hematoma.
5. Usual ruptures and subcapsular hematoma.
6. Latent period—pathology.
7. Latent period—pathology—diagram.
8. Latent period—importance.
9. Latent period—duration.
10. Latent period—symptoms and signs.
11. Secondary hemorrhage—symptoms and signs.
12. Secondary hemorrhage—diagnosis.
13. Ruptured spleen—diagram of findings.
14. Ruptured spleen—X-ray.
15. Ruptured spleen—specimen.
16. Ruptured spleen—specimen.
17. Ruptured spleen—specimen.
18. Ruptured spleen—Photominagraph.
19. Abdominal incisions—drawing.
20. Mortality of Primary hemorrhage.
21. Mortality and R/ review.

In conclusion it may be emphasized that although rupture of the spleen is not a common condition, it is of sufficient frequency and importance to merit consideration in all injuries to the left upper abdominal quadrant and left lower chest wall. Patients who have suffered such injuries and seem to be recovering should be closely followed for a period of at least two weeks, during which time evidence of fresh intraabdominal hemorrhage indicates immediate surgery. Both primary and secondary hemorrhages can be diagnosed early; and it is only by earlier recognition, prompt splenectomy and blood transfusions, that we can hope to reduce the present high mortality rate.

DISCUSSION OF DRS. CHRISTOPHER, KREUSCHER AND GUY'S PAPERS

Dr. George de Tarnowsky, Chicago: I believe we should have had this symposium in the morning and spent the entire day discussing it. It is a tremendous subject, interesting not only to the general practitioner but to the surgeon. Dr. Kreuscher made the statement that if a patient were in shock and it was severe, he treated the shock first, even before a diagnosis of the lesion had been made. If there is anything that should not be done, it is to treat shock before you know what has caused it. Shock may be psychic, caused by precocious septicemia or hemorrhage. What is the patient's condition when in shock? His blood pressure is subnormal, the pulse is thready and rapid and his respirations are rapid and shallow. Hemorrhage, if present, will tend to spontaneously decrease or even cease altogether as long as shock persists. Shock may thus be considered as one of nature's methods of defense. Now what occurs when shock is treated by stimulants, heat, etc. in a case of hemorrhage—if the bleeding has not previously been checked by ligation, compression or packing? I will illustrate by quoting a typical case. Some years ago an assistant of mine was called to see a little girl who had been run over by an automobile. There were distinct marks of the wheel over her right upper abdominal quadrant. Without stopping to think my young friend pulled out his hypodermic and injected camphorated oil and strychnia. The child's cheeks became rosy; she opened her eyes, smiled at her mother for a few seconds—and died! Why? She died of a secondary hemorrhage induced by an artificial rise in blood pressure. The primary hemorrhage had ceased. The Coroner's inquest revealed a tear of the liver. Where I have an abdominal wound to treat, I prefer to close that wound primarily where there is no penetration. In most traumas of the abdominal wall there will be found some contusion or laceration of the skin; the clothing over the same area may also be torn. These findings may help to orient one. If you have a skin lesion below the level of the umbilicus you can rule out the possibility of a ruptured liver, spleen or kidney. One should then think of a wound of the hollow viscera or of their mesenteric vessels.

My good friend Christopher in quoting my paper on traumatic rupture of the bladder made a misstatement. He advised injecting fluid into the bladder in order to find out if the same amount of fluid was returnable. That fallacy is found in all old text-books. It should not be done. If the tear is intra-peritoneal there is danger of creating a spreading peritonitis; if extra-peritoneal there will be extravasation of fluid in the prevesical space of Retzius and a spreading cellulitis. The injection of fluid in a suspected bladder rupture should be condemned.

We should not give a blood transfusion in a suspected hemorrhage unless the patient is on the operat-

ing table ready to be operated upon—transfusion and operation should be simultaneous. Elevate the temperature, blood-pressure, etc., after the surgeon is ready to check the hemorrhage, not before.

Gunshot wounds were mentioned. Every surgeon should have a definite method of procedure in these cases. Make a wide exposure, then examine the liver, stomach, spleen and kidneys first. Next begin with the duodenum and follow the small intestine down to the cecum, the assistant replacing loop after loop of gut in the abdominal cavity after the surgeon has carefully examined same. End up with a thorough examination of the entire colon. With such a procedure one will miss nothing. One patient of mine, shot with a single 22 caliber bullet had eleven perforations of the small gut and three mesenteric tears.

Dr. Ciney Rich, Decatur: I have had a limited number of traumatic injuries to the abdomen and would like to report three cases which were most unusual.

One was a man who was unloading a load of corn and reached up with a single-tree to push a belt over a pulley and the single-tree got caught and whirled over the pulley shaft and hit him in the abdomen. You could palpate a mass of tissue where he was struck. I did not know what it was, but thought it was probably omentum, which it later proved to be. The skin was not broken. The abdomen was explored, both the anterior and the posterior fascia was broken and there was no injury whatever to the abdominal contents. Closure in layers was made and recovery was satisfactory with no resulting hernia.

The second was a small boy who was climbing over a fence, his foot slipped and he fell, and a piece of iron picket struck him in the abdomen. He had a piece of omentum several inches long sticking out through the wound. The protruding omentum was excised, the abdominal contents showed no injury and the wound was closed. Recovery was without incident.

The third was a man of 56, who started to slide off a load of hay and straddled a pitchfork. The handle tore through the perineum entering into the anterior part of the rectum, both the internal and external sphincters of the rectum were torn across and the point of entrance was into the bladder from the rectum and out again through the bladder into the free abdominal cavity. The patient's belly was opened immediately through a lower mid-line incision but above the bladder. The bladder peritoneum was sutured with chromic cat gut and the abdomen closed with Penrose drains, inserted down behind the bladder. The perineal wound was merely packed with gauze to control hemorrhage and was allowed to granulate in. Urine drained through the lower perforation of the bladder for some weeks, but eventually both the upper and lower incisions healed. Plastic operation was later performed on the sphincter ani, and he now has complete bowel and bladder control, except when he has a severe diarrhea. His general condition at the present time is good.

Dr. Frederick W. Slobe, Chicago: After hearing Dr. Guy's excellent presentation on the classical instances of secondary hemorrhage from the spleen I am constrained to mention a very tragic case we had of a similar condition in the liver two and a half weeks following accident. The case was treated conservatively, the symptoms progressively diminishing so that the patient was out of bed in ten days. Two and a half weeks after the accident he suddenly developed severe pain in the abdomen and went into a state of marked shock which became progressively more severe in spite of active treatment terminating fatally in two hours. Autopsy showed the abdomen full of fresh blood as a result of secondary hemorrhage from a sub-capsular hematoma in the liver.

This instance is a good example of the old axiom of prompt operation for abdominal injuries when in definite doubt. However, when the patient is under close observation and the symptoms and signs are progressively more favorable one is usually warranted in deciding against operation. There are many cases of minor tears of the liver which recover spontaneously under a regime of absolute rest and a firm binder around the upper abdomen. Many of such tears are too small to pack and many would be simply aggravated by attempts at suture. Careful observation emphasizing abdominal palpation, the condition of the pulse, temperature, blood pressure, blood counts, presence of vomiting, etc., usually enables one to decide the important question of whether or not to operate. When the symptoms are progressively worse and there is definite doubt in the mind of the surgeon, early operation within the first six hours is indicated. Of course, when the condition is complicated by hemorrhage, the patient is operated on at once and a blood transfusion given concurrently.

Dr. Sumner L. Koch, Chicago: I want to ask Dr. Christopher and Dr. Kreuscher if in the case of rupture of the liver it would not be better to stop the bleeding by pressure and then insert mattress sutures, rather than to put in a pack which controls bleeding temporarily but invites future trouble from secondary hemorrhage and from infection.

I would like to recall to you the advice of Dr. Kanavel concerning examination for retro-peritoneal tears of the duodenum. In the case of such an injury, seen at the Cook County Hospital, we could find no evidence of intra-abdominal injury when the abdomen was first opened. Following Dr. Kanavel's advice we lifted the great omentum and stomach and examined the posterior paretal peritoneum. Just below the origin of the mesocolon the posterior peritoneum was bluish and slightly elevated. When it was incised blood and gas escaped. On further examination it was found that the patient had sustained a complete transverse rupture of the horizontal portion of the duodenum. Unfortunately he died while repair was being attempted, but the injury would have been overlooked unless the maneuver suggested by Dr. Kanavel had been carried out.

Dr. Frederick Christopher, Evanston (closing): Just about twenty years ago, in Paris, I can well remember the reverence and affection we had for Dr. Tarnowsky

when he commanded the Red Cross Hospital under fire, and I have never lost that reverence and affection.

As to the treatment of shock before you attempt to make a diagnosis, I am not so sure about that point. What I refer to is the procedure of taking a patient on the cart and moving him for x-ray, when the pulse is poor and the blood pressure is down. I mean that you should keep him quiet, perhaps give fluids, but give him time to recover from the primary shock. If they are in such bad condition from shock they will not withstand a major operation. If they do not improve and get steadily worse operation is unlikely to help them.

The point about giving blood during operation is good. You may have to give them a little saline to get them into condition.

The point Dr. Koch makes about packing the liver almost certainly inviting infection I think is true. In rupture of the liver my experience is limited. I packed the one case I had. I am sure it would have been impossible to control the hemorrhage by suture, and if it comes to choice between infection and hemorrhage, you will take infection. The thing you must do is to stop the bleeding. The wound is open and you can gradually remove the packing.

MOSQUITO CONTROL IN ILLINOIS AS A PUBLIC HEALTH MEASURE

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Health Commissioner of Village of Riverside, Illinois

RIVERSIDE, ILLINOIS

It may be difficult to realize that only forty years ago mosquitoes were looked upon merely as nuisances that made localities unfit for human habitation, agricultural uses and industrial pursuits. So, throughout our country and many others, mosquitoes were considered a necessary summer annoyance and millions of dollars were spent in screening windows and porches and for repellents such as citronella.

Mosquito control work in the Des Plaines Valley of Cook County, while only a little over ten years old, stands out as one of the greatest economic accomplishments for this District. The District comprises 76 square miles and includes 22 villages. There are 200,000 population with a property assessed valuation of $120,000,000.

Cook County Fifteen Years Ago

In Cook County, 15 years ago, the prevalence of malaria was waning due to agricultural drainage and real estate development. However, with increased habitation came two varieties of mosquito in such numbers that there was no comfort in this valley, especially toward late summer. These were first, the domestic or polluted water mosquito which goes into the homes for its blood; and second, the flood water or swamp mosquito which bites outdoors. Villagers who could afford it left for the summer. Mosquito bars over beds was common practice, and the use of vacuum cleaners to remove mosquitoes from walls and ceilings of bedrooms was resorted to. Villages within two miles of polluted streams swarmed with the pests. It was not an uncommon sight to see golfers wearing mosquito nets over their heads, gloves, and newspapers inside their stockings. The Ravinia Opera along the north shore of Lake Michigan had its attendance very much depleted. People could not enjoy their yards or the Forest Preserve during the daytime.

With this condition prevailing the people tried to meet the situation by raising public subscriptions for sporadic and limited eradication. The Chicago Sanitary District was appealed to for help because of the pollution in the streams and responded to a certain extent. These efforts were of small avail, but did teach the people that the situation could be handled if a specific and efficient effort were made.

Illinois Mosquito Abatement Act

It became apparent that legislation should be passed permitting the formation of Mosquito Districts to be supported by a tax for that special purpose. After much effort on the part of interested citizens and civic organizations such a law was passed in 1927. It is now not necessary to have mosquitoes in any part of Illinois by reason of this law. By referendum a district may be formed as large as you like. It is best that it follow township or county lines. It is necessary to petition a County Judge with five per cent. of the legal voters in each village and unincorporated part of the proposed district. He calls an election and a majority of those voting decides. The judge appoints a Board of Trustees consisting of five men, without salary, to take all necessary or proper steps for the extermination of mosquitoes, flies and other insects in the district and with the power to levy a general tax not to exceed one-half mill on each dollar of taxable property in the District.

Mosquito Abatement Work in United States

Read before Section on Public Health and Hygiene of Illinois State Medical Society, May 17, 1938.

In order for you to appreciate the tremendous popular appeal of mosquito abatement work perhaps it would be well to review what has taken place in the United States. Briefly, the value of mosquito control was recognized shortly after the successful work in Cuba and the Panama Canal Zone. Now eleven states have laws governing organization of mosquito abatement districts. Listed chronologically as to the passage of the acts they are: New Jersey, California, New York, Utah, Illinois, Mississippi, Florida, Massachusetts, Virginia, Delaware, Maryland. In these states there are approximately one hundred organized districts. In the malaria belt fourteen states carry on mosquito abatement under authority of the State Boards of Health, six of these states having special laws regulating mosquito breeding in impounded water reservoirs which apply especially to the large water power developments in the manufacturing states.

Work in District

A summary of the accomplishments in our district during the past ten years will be recounted briefly.

Thirty-two different kinds of mosquitos have been found in the District; some prevalent, some rare and some non-biters. One group appears in the early spring, another group in summer and a third group in autumn.

The spring group, consisting of six species, was brought under control during the third year by a system of careful inspection and timely spraying of pyrethrum larvacide on woodland pools during the latter part of April. This group of hard-biting woodland mosquitoes no longer causes annoyance in the Forest Preserves and in villages near wooded areas. The most prevalent of this group is *Aedes stimulans.*

The summer group consists of sixteen species, most of which are flood water mosquitoes having a longer flight range than those of the spring group. All species in this group have been brought under control within the District. However, one species of this group, *Aedes vexans,* has an unusually long flight range of sixteen miles permitting 20 per cent. of the broods originating in the large marshes outside our District to fly into the District. Therefore, there is an occasional annoyance lasting perhaps ten days at a time because of these flights from without.

The autumn mosquitoes, consisting of four species, caused intense annoyance inside dwellings prior to the formation of the District. This group has a comparatively short flight range not exceeding two and one-half miles, but due to the close proximity of polluted waters annoyance reached unbearable proportions. *Culex salinarius* bred in prodigious numbers in polluted marshes and *Culex pipiens* emerged in enormous numbers from 114 acres of the polluted Des Plaines River and 57 acres of other polluted streams in the District. Annoyance caused by these two species undoubtedly caused the establishment of the District. Looking back over the ten years, I believe the most outstanding features of progress have been the devising of efficient methods of spraying polluted waters within the first several years; and the persistency with which members of the Board of Trustees of this District have fought for clean streams. Large broods of mosquitoes from extensive polluted areas have been reduced to an occasional complaint, usually traced to barrels or tubs on private premises. Through correlating efforts of our Sanitary Engineer, Mr. J. Lyell Clarke, many bad sanitary conditions have been called to the attention of other municipalities or corporations. For the most part they have cooperated and corrected these conditions. This has been a very important part that our District has played in a general sanitary way for the entire District.

Conservation

I like to think, too, of the marked advancement our District has made in the development and new methods of mosquito control through cooperation with and under the guidance of eminent conservationists of this state. I may say frankly that mosquito control in many parts of the United States is looked upon by many wildlife preservationists as opposed to their aims and in conflict with their principles. They claim that the drainage of marshes destroys wildlife habitats; that spraying of oil kills vegetation and is otherwise harmful to wildlife.

It was through criticism of this sort that we learned to appreciate the value of biological control of mosquitoes. By becoming better acquainted each with the other's problem, it was found that our aims and theirs could be obtained with distinct benefits to each. The common

problems were studied in the field by a committee of the Conservation Council and our staff. The outcome of each resulted in a new method of biological control of mosquitoes. They learned that marshes might be improved into wildlife refuges and we learned to control mosquito production more efficiently. Likewise, this criticism led to the abandonment of furnace oil in favor of pyrethrum larvacide which does not harm fish, fowl, foliage or animal life. Similarly, the conservationists learned that they could well afford to join forces with the Mosquito Abatement District in fighting for clean streams. The laymen as well as the conservationists should bear in mind that the destruction of wildlife is furthest from the mind of the mosquito control expert. Mosquito larvae occupy a low station in the food chain, therefore, destruction of its many predators would be to defeat its own purpose.

How Mosquitoes Effect Economics and Property Valuations

In these days one would hardly associate a stock market crash with a mosquito, yet we find in the volume "Rise and Fall of Disease in Illinois" by Dr. Isaac D. Rawlings, former State Health Officer, this statement: "The report of a single case of yellow fever in the south caused a shrinkage of the provision market in Chicago alone, which amounted to a million dollars in 24 hours." This was during panicky times sixty years ago when yellow fever terrified large centers of population. Today our more enlightened age is willing to condone an annual loss due to rural malaria three hundred and sixty-eight times greater with a high order of complacency, as borne out by the statement of Dr. L. L. Williams, U. S. Public Health Service, Director of Malaria Control in the United States, when he states that between 1930 and 1937 an average of 4,000,000 cases of malaria occurred annually in sixteen southern states, and that the annual toll in dollars amounts to a loss of $328,000,000.

Dr. Headlee, State Entomologist of New Jersey, states that an expenditure of one-half million dollars increased the value of seashore property of New Jersey one-half billion dollars between 1920 and 1930.

Diseases Transmitted by Mosquitoes

In 1878, Patrick Manson discovered that *filariasis* was transmitted by mosquitoes. Twelve years later Grassi and Filletti found that mosquitoes transmitted *bird malaria.* Eight years later, Ronald Ross learned that human *malaria* was transmitted by mosquitoes. Two years later Walter Reed discovered a mosquito vector for *yellow fever.* During the same year four Frenchmen learned that mosquitoes transmitted *heart worm* in dogs. Three years thereafter Graham and Deirut, working in Syria discovered a mosquito vector for *dengue* or *breakbone fever.* Twenty-five years later Kligler, Muckenfuss and Rivers showed that *fowl-pox* could be transmitted by mosquitoes. Then, five years elapsed before another mosquito borne disease was discovered. In 1933 R. A. Kelser, a veterinarian in the U. S. Army discovered that *meningitis* in horses and mules formerly known as blind staggers is transmitted by mosquitoes. This latter discovery is unusual in one respect, namely, that the disease *equine encephalomyelitis* is transmitted by eight known varieties of common *outdoor mosquitoes;* whereas the seven other diseases are transmitted by domestic *house-entering mosquitoes.* Epidemics occur in horses and mules strictly in rural districts widely separated over the United States and have not occurred in stockyards. It opens up a new field for research wherein it may be found that the outdoor mosquito, such as the flood water and salt marsh varieties, is capable of transmitting common diseases heretofore disassociated with it because of its habits of outdoor biting. One year later in 1934 Nieschulz, Bedford and DuToit reported that at least one mosquito species is a natural vector for *Blue-Tongue* in Sheep.

The carriers of seven of the nine diseases *(filariasis, avian malaria, malaria, yellow fever, heart work, dengue and fowl pox)* are mosquitoes which breed in water around human habitation; all being house-entering types, but now with the new knowledge that mosquitoes transmit *equine encephalomyelitis* and *blue tongue,* we find ourselves, perhaps, at the threshold of discovery of a group of diseases transmitted by outdoor biters.

Thus we find that within the past sixty years mosquitoes are capable of transmitting nine diseases; two of the round worm type; two of the protozoan type; five of the virus type and one of the spirochete type. Discoveries were

made at intervals of 12, 8, 3, 3, and 28, 3, 1 years. With these facts in mind it is not at all unreasonable to believe that many other diseases are transmitted by mosquitoes. Therefore, it is suggested that those engaged in research in the mid-western states may avail themselves of the records of the Des Plaines Valley Mosquito Abatement District in order to correlate the characteristics of disease epidemics with the characteristics of mosquito prevalence in the mid-western states. Our district has a ten-year record of the seasonal prevalence of mosquitoes of thirty-two species which is available for research workers. By this means search for a mosquito vector for a certain disease may be narrowed down to one suspected species, whereas by the process of elimination thirty-two different species would likely have to be dealt with in a process of elimination. I believe one of the biggest contributions our District can make to science is the seasonal records of mosquito prevalence. Our records may be more valuable than mere records to prove that our work is effective.

I cite you the use of these records. They may be used in research work — you know of course that a beautiful correlation may be made between flies and typhoid fever. Likewise with mosquitoes a definite correlation may be made between *Aedes aegypti* and yellow fever—between malaria and *Anopheles*—lags between prevalence peaks of insects and onset of disease vary with different incubation periods. But here in this region there is a species of mosquito that does not build up numerically from spring to fall. There are those that have over-wintering eggs that lie dormant—viable all winter and hatch in time of flood periods. Here you have real use of the prevalence of such broods to tie in with an epidemic of disease—or for instance a disease that occurs in April may be correlated with that unusually early appearance of a hibernating mosquito; one in May with the woodland group of mosquitoes; in July with the flood water mosquitoes; and in September with the domestic mosquitoes. By this means a certain mosquito may be placed under suspicion as vector for a certain disease. Our District would be glad indeed to work with local universities or schools or individuals engaged in research.

DISCUSSION

Dr. R. L. Reynolds: Dr. Fuller has presented a very interesting and comprehensive paper—dealing with all phases of mosquito control and their relation to the transmission of diseases. It is a valuable contribution and should be in the hands of every health officer.

In discussing this paper, I would emphasize four cardinal points discussed therein. *First* and most important from the viewpoint of the medical profession is that the mosquito has been incriminated in the transmission of nine diseases. *Second,* that the abatement of mosquito annoyance has spread rapidly within the last twenty-five years in the United States. *Third,* that a new method has been devised which enlists the natural enemies of mosquitoes in the fight against them. And *fourth,* that research and experimental work is an important part of mosquito control.

Referring to Figure 1, which shows the seven diseases transmitted by the mosquito. One may visualize the fact that the mosquito is the most dangerous of all

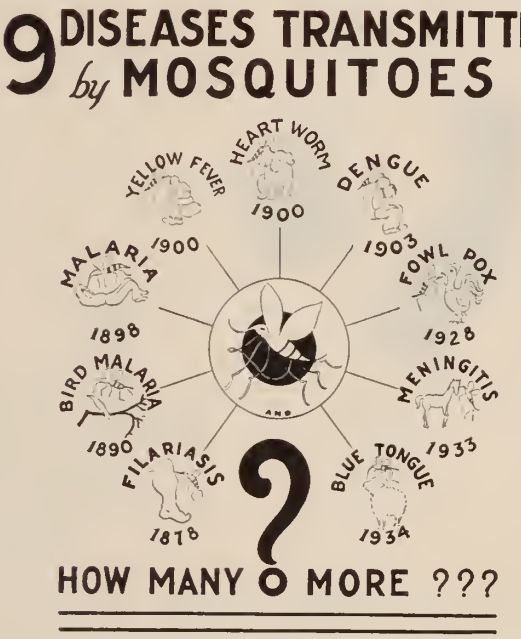


Fig. 1. Slide, showing nine diseases transmitted by mosquitoes.

insects when we consider that there are 400,000 different species of insects—one thousand species of mosquitoes—and that the known mosquito transmitters of diseases number only twenty. According to our present knowledge, this is true but further investigation will add other diseases and emphasize to a further degree the importance of the mosquito in its role of disseminating diseases. It is exceedingly important to note that the mosquito can transmit diseases that fall in each category of disease producing organisms. It can transmit protozoa. It can transmit filterable viruses. It can transmit bacteria and it can transmit worms. With this point in mind, I would emphasize the value of cooperation between those engaged in medical research and those engaged in mosquito control work; as those carrying on mosquito control work possess in-

valuable data concerning the seasonal prevalence of a certain species of mosquitoes. Possession of this knowledge by the medical man may materially simplify his problem if his problem is to find the mosquito vector of a certain disease.

Referring to Figure 2, which shows the rapid progress of mosquito control in the United States during the past twenty-five years; the medical man may justly boast of establishing a higher standard of living for the American people, for it was the medical research man who aroused public interest in mosquito control purely as a public health measure. This movement was accepted very quickly by the public, and the general principle of mosquito control extended and applied by engineers and entomologists as a means of making life less miserable in regions where not only disease carrying mosquitoes but pest mosquitoes are prevalent. This movement, then, has grown from a means of disease prevention to an indispensable measure to promote human comfort; thereby establishing a higher standard of living.

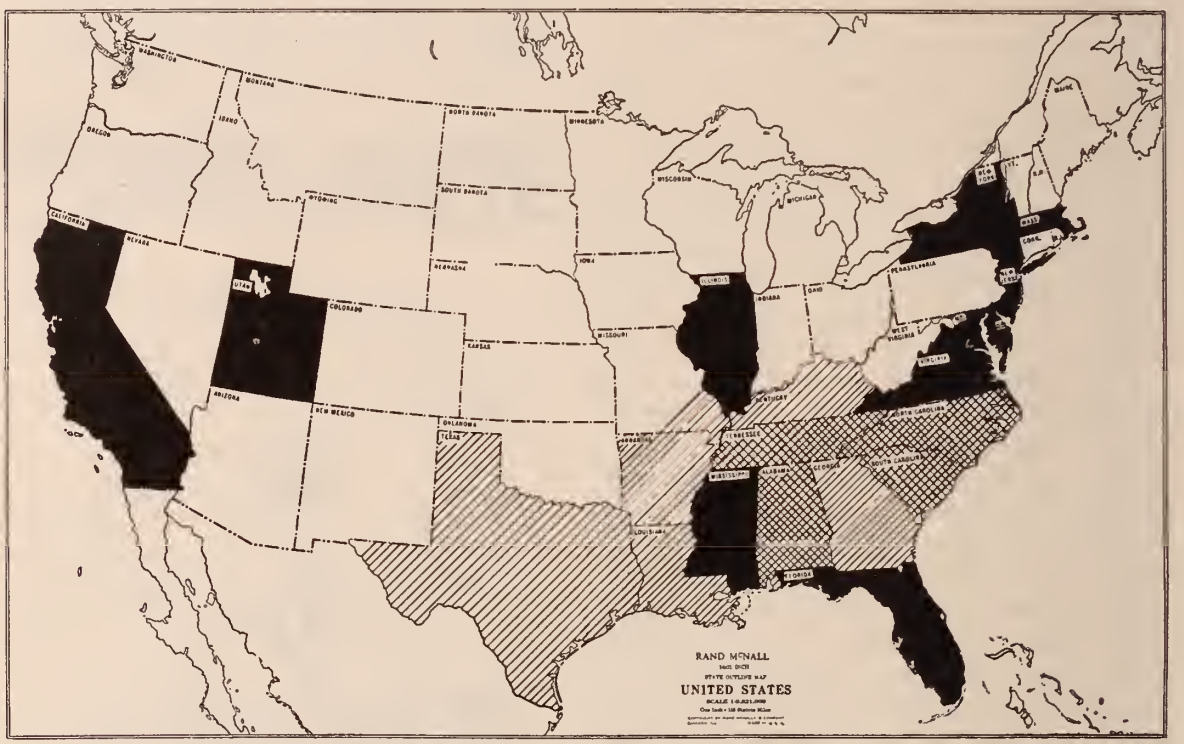


Fig. 2. Map of mosquito control work in United States.

Black—State law permitting formation of mosquito abatement districts.
Cross Hatched—State law requiring clearing of timber from reservoir sites to prevent production of malaria mosquitoes.
Diagonal Hatched—Malaria control directed by State Board of Health.
Blank—No mosquito abatement law.

Referring to Figure 3, this paper calls attention to a radical departure from the customary procedure—drainage—which has been the fundamental procedure in mosquito control work. It has introduced a new technique; that of flooding low lying areas which breed mosquitoes and the use of Wildlife Oases in intermittent marshes. This technique enlists the natural enemies of mosquitoes in the fight against them. Figure 3 shows a terraced hole deep enough to prevent drying up in summer or freezing solid in winter in which the top feeding minnow may live. From the central hole radiating ditches lead to shallow holes in the marsh. After heavy rains when the adjoining lowlands are flooded, minnows may go out through these channels and feed upon the mosquito larvae, and when the flood waters recede the minnows may retreat to the central hole.

Fourth, I want to conclude by emphasizing the necessity of all research and experimental work as a part of the program of every mosquito abatement project. Research is the leaven that raises routine work to a high standard. In The Des Plaines Valley Mosquito Abatement District some of the new machines devised are a motorcycle with a sidecar equipped for spraying street catch basins; a powerful pump mounted on a boat for spraying rivers and streams; and a large sprayer mounted on broad tread rubber tires known as the "Swamp Angel" which may be driven back and forth across treacherous marshes while spraying mosquito larvacide. These new machines are important from the standpoint of efficiency, but the phase of mosquito control which holds the most interest for me are the research problems of field and laboratory. For the past several years we have been engaged in studying

the life histories of two of our most prevalent *Culex* species of the house entering type. We have made great strides in defining the breeding places of *Aedes vexans,* our most prevalent outdoor mosquito. We have studied the egg laying habits and carried on extensive studies having to do with the flight characteristics of this species.



Fig. 3. Picture of Wildlife Oasis.

As an example of our research work we may refer to Figure 4 showing Experiment No. 1 of a series of five experiments to determine how far the flood water mosquito, *Aedes vexans,* would fly. Five million mosquitoes were stained with analine dye dust as they emerged from their breeding place. For thirty days thereafter, mosquitoes were caught at several hundred catching posts within a radius of fifteen miles. Each dot on the chart represents the point at which red stained mosquitoes were captured. The extreme flight registered was sixteen miles. An experiment of this type is extremely important not only to the district in the Chicago area where this work was carried out, but to mosquito control workers all over the world.

Dr. Harry J. Stewart, Oak Park: I don't wish to discuss this paper. I only wish to congratulate the people who have done this splendid work. It seems to me since way back in 1900, when Walter Reed and William Gorgas wrote great pages in medical history in preventitve medicine, that the mosquito abatement would be accomplished very much faster than it has. I happen to live in a part of this particular community from which this record comes—Oak Park—and have experienced the menace and the trouble and the inconvenience from these pests that used to drive us almost crazy. We couldn't screen our homes adequately because they seemed to get in the house in some way. We could find no comfort in our yards or on the golf course without a newspaper wrapped around our legs and mosquito nets over our heads. I have lived to see the abatement of these things and would just like to add a word of commendation and hope that, through these splendid papers that Dr. Fuller and Dr. Reynolds have given us here today that the medical men and women of Illinois will go back to their communities and not rest until they have set in motion the machinery to do away with these pests. I have no doubt this condition exists in all parts of the country and all parts of Illinois, and particularly around Peoria and Pekin, where they have many marshes. It seems to me some effort should be made so that those communities can rid themselves of these pests; that is the only word that you can use, regardless of the diseases that are transmitted by them.

With the cost to the country of millions of dollars every year, as the essayist has referred to in his statistics, 4,000,000 people suffering from malaria every year, it seems to me some very vital step should be taken by this group to stimulate the abatement of these mosquitoes. It was 30 or 40 years ago that Walter Reed discovered that yellow fever was carried by a mosquito, and William Gorgas transformed a cesspool at Panama into one of the most delightful places to

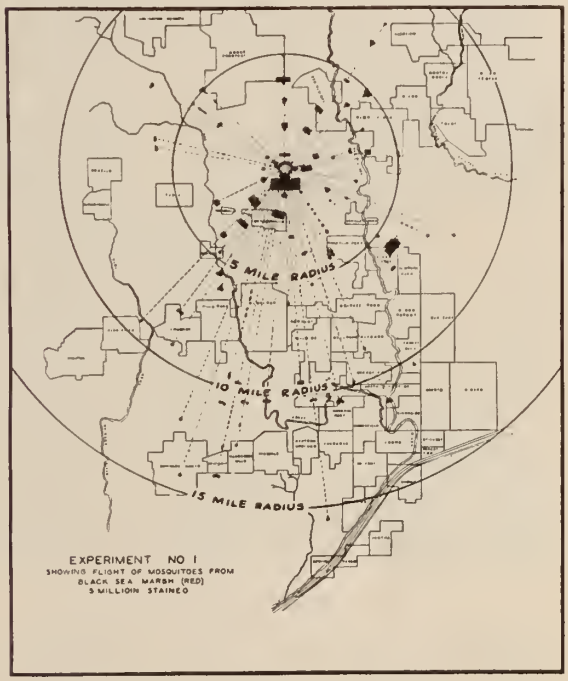


Fig. 4. Staining experiments.

live in in this country, and if they can do it in a place like that, there is no reason why it cannot be done throughout the entire land. From an economic point of view the medical men and women should blaze the trail and stop the suffering from malaria and incidentally save millions of dollars to the afflicted. Is it not worth while? Laymen must look to us for leadership in these matters which are purely health measures.

Dr. Spencer S. Fuller, Riverside (closing): The main object of the paper was to bring before you the possibility of getting rid of mosquitos if you want to. It is possible. Of course, in the territory where there is not a large assessed valuation you would not be able to raise a large amount of money, but the legal machinery for creating mosquito abatement districts is on the statute books in Illinois if you want to use it and it can be used with effect.

THE SYMPTOM-COMPLEX OF VISCERAL-SPINAL PAIN

EDWARD L. COMPERE, M. D.
CHICAGO

Abdominal pain may result from acute or chronic lesions of the spinal cord, the spine, or its appendages. Conversely, the dominant symptom which announces disease of the viscera may be pain in the back.

Every internist and surgeon is aware, either because of lessons learned from his own errors of judgment or as a result of competent medical teaching, of the dangers of diagnosing tabetic crisis as abdominal disease. Little emphasis has been placed in medical teaching, in textbooks and systems of medicine, or in the vast literature dealing with abdominal symptomatology, upon the relatively common fact that the etiology of visceral pain sometimes may be found in the spine or spinal cord. On the other hand, while the wise orthopedic surgeon hesitates to undertake treatment to relieve pain in the back without first carefully examining the patient for evidence of primary neurological disease, diseases of the female pelvis, or of the male urogenital organs, few, indeed, are alert to the equally important fact that diseases of the chest or of the gastrointestinal organs may produce, as the primary complaint, pain in the back.

PAIN IN THE BACK SECONDARY TO LESIONS OF THE VISCERA

Steindler very briefly mentions the fact that appendicitis, involvement of the retroperitoneal glands, hemorrhoids, diseases of the colon or rectum, hernia, or peritonitis may produce, as a primary symptom, pain in the back.

Mixter, more recently, has emphasized the importance of evaluating all back pain in the light of possible intra-abdominal or pelvic lesions. He mentions, from his own record, two gall-bladders, two appendices, one fibroid and one kidney which had become surgical specimen through error because of pain referred to the regions of the organs mentioned when the primary disease consisted of a tumor of the thoracic portion of the spinal cord. Mixter reported seven cases of duodenal ulcer in which the initial complaint was of pain in the dorsal spine.

The following cases have been selected from my own series as instances of visceral disease in which the primary complaint was pain in the spine.

Case 1. *Duodenal ulcer causing backache.* J. B. M., male, aged 45 years, was admitted to the University of Chicago Clinics January 13, 1931. During the past five years he had suffered from intermittent attacks of pain described as a dull ache in the mid-dorsal region of the spine. Each of these attacks lasted from two to six weeks. The pain was frequently associated with nausea and vomiting. Rest and relaxation for one or two weeks usually afforded complete relief.

He had consulted allopaths, osteopaths, and chiropractors and his greatest help came from the latter, who both manipulated his back and prescribed special diets.

The past history included an injury to the back when, as a young man, he fell on his head while diving in the school gymnasium.

Physical examination showed a slight rounding of the dorsal spine but no definite gibbus. There was no spine tenderness, but slight pain was noted when the lower dorsal spine was percussed. The colon was palpable and tender and felt "spastic."

Roentgenograms of the spine revealed marginal irregularity of the articular surfaces of the bodies of thoracic vertebrae five, six and seven and the inferior surface of the eleventh (Fig. 1-A). There were several distinct breaks in the cortical plates, suggesting ruptures of the nuclei pulposi, with secondary narrowing of the intervertebral disc spaces.

A diagnosis of old vertebral juvenile epiphysitis dorsalis with Schmorl's nodules was made. A back-brace was recommended. However, because of the nausea and vomiting, and because of the relief which he stated that he obtained when not under physical stress or mental strain, gastrointestinal and neurological examinations were requested.

No evidence of involvement of the central nervous system was found, but the gastrointestinal studies revealed a large duodenal ulcer (Fig. 1-B). Treatment for the ulcer was followed by complete relief of the symptoms.

Case 2. *Pain in the back relieved by ulcer management.* M. P., female, age 25 years, was referred to the Orthopedic Clinic at the University of Chicago, February 24, 1938, because of intermittent pain in the back, duration two and one-half years, located at the level of the eleventh thoracic to the second lumbar vertebrae. The patient stated that it almost invariably awakened her about 3:00 o'clock in the morning and could only be relieved by arising from the bed and walking around the room. It was not made worse by activity, hard work, or fatigue and did not occur during the day. Greatest discomfort was noted when she slept on her left side.

More detailed questions elicited the information that

From the Division of Orthopedic Surgery, Department of Surgery, the University of Chicago.

Read before the Section of Surgery, Illinois State Medical Meeting, Springfield, Illinois, May 17, 1938.

the pain did not awaken her during the night if she did not try to go to sleep until after midnight. It was her custom on such occasions to eat a sandwich or light lunch just before retiring.

An examination revealed no limitation of motion in the spine or in any of the joints of the extremities, and all tests to elicit symptoms in the low-back region were negative. Neurological examination was normal.

An x-ray of the spine revealed several small punched-out areas in the upper dorsal vertebral bodies—lesions commonly classified as Schmorl's nodules. Because of the peculiar time of onset of the pain; no association of the discomfort with activity; the absence of any positive findings in the orthopedic examination; and the history of freedom from pain when a late supper was eaten, duodenal ulcer was suspected. The patient could not remain in the city for gastrointestinal x-rays at the time of this visit. She was advised with regard to her diet and was told to take one glass of milk and eat several crackers at bedtime and to repeat the milk and crackers if she awakened as a result of the pain.

On March 9th, two weeks after this visit to the clinics, the patient wrote that she had been eating before going to bed and had only one recurrence of the pain. She still found some difficulty in sleeping on her left side.

Roentgenograms were made on April 12th, at which time it was thought that the fluoroscopic examination showed a very small crater near the apex of the duodenal bulb.

Ulcer management was continued and she was last seen in the clinic late in April, when she stated that on only three occasions since the time of her first visit, approximately two months earlier, had the pain recurred. These attacks were promptly relieved by eating.

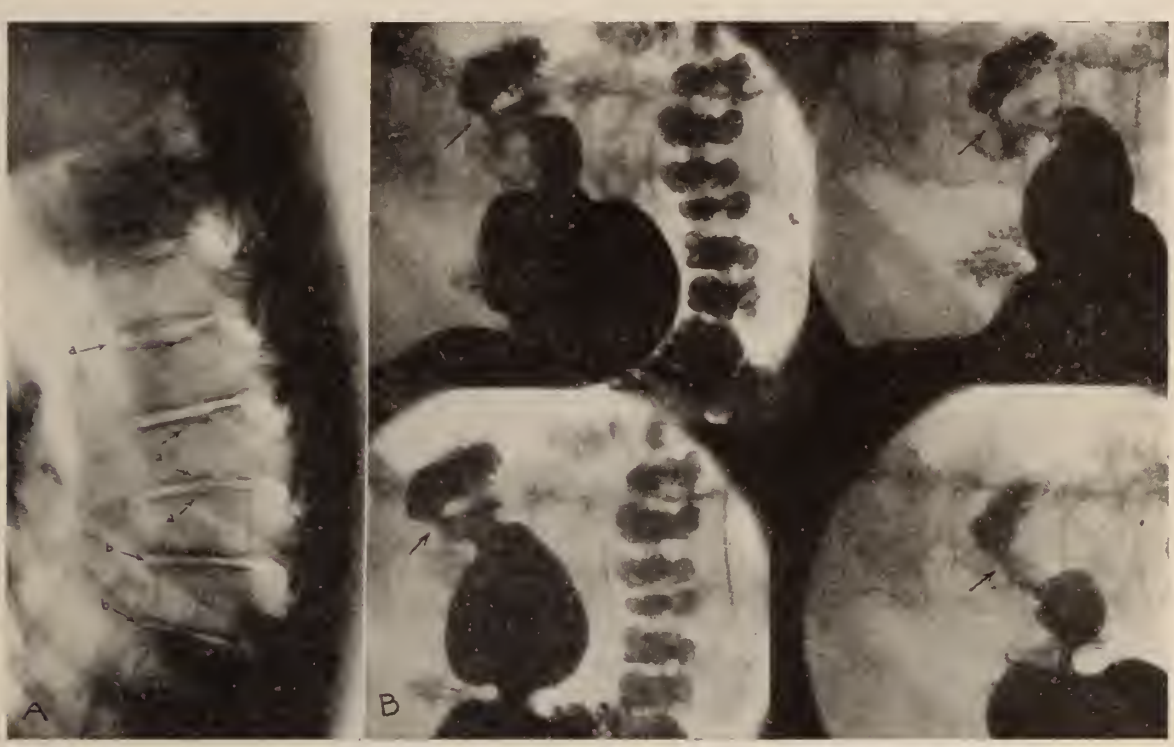


Fig. 1. Case 1. J. B. M., male aged 45 years, applied to the Orthopedic Clinic of the University of Chicago for relief of pain in the mid-thoracic region of the spine. The lateral roentgenogram of the spine (A) shows narrowing of the intervertebral discs in the region of which he complained, with multiple, small, punched-out areas, suggesting small ruptures of the nuclei pulposi, and beginning anterior lipping of the vertebral bodies. Treatment of the spine by means of a back-brace did not afford relief. There was also a history of nausea and vomiting and an x-ray examination following a Barium meal (B) showed a constant filling defect in the duodenal bulb, typical of ulcer. Ulcer management completely relieved all symptoms including the pain in the back.

Case 3. *Jejunal ulcer causing low-back pain.* E. K., female, age 31 years, came to the Orthopedic Clinic at the University of Chicago, November 29, 1937, complaining of low-back pain, intermittent in character, non-radiating, the onset of which she dated from approximately 20 years earlier, when she had suffered a fall. There had been intervals of freedom from the backache of from six months to two years.

One year before coming to the University of Chicago Clinic a diagnosis of duodenal ulcer was made and a gastroenterostomy was performed and the appendix was

removed. The pain had returned a short time afterward.

Examination of the spine revealed no pain upon motion or manipulation and no limitation of motion. She was not made comfortable by any of the usual orthopedic (supportive) procedures. She was referred to the Gastrointestinal Division where a diagnosis of jejunal ulcer was made.

Case 4. *Pain in the thoracic spine secondary to bronchiectasis.* E. G., female, age 22 years, was seen in the Orthopedic Clinic of the University of Chicago November 13, 1937, complaining of pain in the back, intermittent in character, for the duration of about one year. The pain was localized to the mid-thoracic region. Further questioning revealed the fact that the pain was made worse by deep inspiration and had not been present prior to an attack of what was diagnosed as double lobar pneumonia eleven months previously.

There was no limitation of spine motion and no tenderness over the spine. Auscultation and percussion revealed squeaky rales but normal resonance throughout the chest. A diagnosis of chronic bronchitis, with possible bronchiectasis was made and the latter impression was confirmed by the consultation in the Chest Clinic. Bilateral chronic maxillary sinusitis was also diagnosed and thought to be a contributory factor to the pulmonary disease. Following bilateral radical sinus operations there has been steady improvement of the chest condition with complete disappearance of the pain in the back.

COMMENT

In each of the four cases which have been reviewed, the dominant symptom, upon admission to the University of Chicago Clinics, was pain in the back. In two cases (one and two) the pain was located in the region of the mid or lower thoracic spine. In these instances a diagnosis of duodenal ulcer was made and the pain was relieved when the patient was placed upon ulcer management. In Case 1 the clinical picture was made more confusing by the fact that a roentgenogram of the thoracic spine showed definite thinning of the intervertebral disc spaces with nucleus pulposus lesions and beginning anterior lipping of the vertebral bodies. The fact that the pain in this instance was not related to exercise or to heavy physical labor should have made the examiner very skeptical about its relationship to the spine. On the other hand the patient volunteered the information that rest often afforded relief. Treatment applied to the spine was without definite benefit but complete relief was obtained when the patient was placed upon strict ulcer management. In Case 3 the patient had had symptoms for many years, until she had developed a rather marked neurosis. Although a diagnosis of jejunal ulcer was made and no orthopedic disease was found, she was not cooperative and she has not been afforded relief from pain comparable to that obtained in the cases of duodenal ulcer.

It has long been known that intrathoracic disease, especially if it produces an irritation of the diaphragm, may lead to the incorrect diagnosis of an acute intra-abdominal condition. It is not uncommon for acute or chronic thoracic disease to produce pain in the spine. Case 4 is of interest because of the fact that she came first to the Orthopedic Clinic complaining of pain in the back. Bronchiectasis was diagnosed and treatment of this condition was followed by complete relief of the pain in the thoracic spine.

ABDOMINAL PAIN RESULTING FROM LESIONS OF THE SPINAL CORD, SPINE, OR APPENDAGES

Acute abdominal symptoms are common following severe trauma which produces fracture of the spine or its appendages or concussion of the spinal cord. Intermittent or chronic abdominal pain may result from acute or chronic infection of the spine, from degenerative arthritis, chronic degenerative changes of the intervertebral discs, retropulsion of the nucleus pulposus of the intervertebral discs with pressure upon the spinal cord or nerve roots, or from benign or malignant neoplasms of the spine or of the spinal cord.

Carnett has described pseudo-appendicitis or gall-bladder disease due to intercostal neuralgia, arising from irritation of the nerve roots within the spinal canal.

Nielsen and Gunther and Kerr have similarly described cases in which abdominal symptoms were caused by a radicular syndrome in which the etiological factor was hypertrophic osteoarthritis of the spine.

Ussher considered that visceral disturbances secondary to curvatures of the spine were common and Wills and Atsatt have adopted the term "Viscero-spinal Syndrome" as descriptive of this particular clinical manifestation.

Nielsen states that the characteristic symptoms of this syndrome are pain in the abdomen without deep tenderness, relief of symtoms by change of spinal posture or through external support, extreme hyperesthesia to light touch in the affected area with, at times, atrophy of muscles due to involvement of the motor as well as the sensory roots. Symptoms and findings in the follow-

ing cases are considered to be characteristic of the syndrome mentioned.

Case 5. *Acute abdominal symptoms secondary to compression fracture of the spine.* M. B., female, aged 63 years. This patient was thrown from the back seat to the top of a speeding car and down upon the floor of the tonneau. On the day following the accident she developed marked distension of the abdomen and in another hospital a laparotomy was performed because of a tentative diagnosis of ruptured viscus. No injury to the abdominal contents was found at the operation.

Subsequently roentgenograms of the spine were made to the University of Chicago Clinics. The symptoms were not relieved by this operation.

Our examinations included cystoscopic studies which revealed a cord type of bladder. There was slight evidence of atrophy in both lower extremities and the reflexes were suppressed, although present.

A roentgenographic examination showed congenital anomalies of the lumbosacral region, scoliosis, and lateral wedging of the lower lumbar vertebrae (Fig. 3).

A lumbosacral fusion operation was advised. When the posterior bony wall of the sacral canal was exposed, it was found to be paper-thin and when stripped away, a large bluish, fluid-filled sac bulged through the



Fig. 2. Case 5. M. B., female, aged 63 years, was admitted to the University of Chicago Clinics because of pain in the lower thoracic region of the spine which dated from an accident in which she was bounced off of the seat of a speeding automobile when it struck an elevation in the pavement. Following the injury, she developed a marked distention of the abdomen and 24 hours after the accident a laparotomy was performed because of a suspected ruptured viscus. No intra-abdominal lesion was found. The roentgenograms of the spine show a central compression fracture of the 11th thoracic and of the first lumbar vertebrae, (A) and (B). Injuries to the spine frequently produce paralytic ileus with abdominal distention and discomfort, and should always be demonstrated or ruled out in cases giving history of acute trauma.

and these showed a central compression fracture of the eleventh thoracic and of the first lumbar vertebral bodies (Fig. 2).

Case 6. *Appendectomy and ovariectomy because of abdominal pain due to extradural cyst of the spine.* B. K., female, age 22, entered the University of Chicago Clinics on November 27, 1934, complaining of pain deep in the right lower abdominal quadrant which she stated had persisted since an automobile accident eleven years before; painful urination for one and one-half years; pain in the low-back; intermittent attacks of nausea and vomiting; and frequent headaches.

Because of the abdominal pain, her appendix and right ovary had been removed two years before coming

defect. This proved to be an extradural cyst which extended from the upper level of the fourth lumbar to the lower level of the third sacral vertebra. The sacral and lower lumbar canal was markedly widened throughout this region. The cyst was removed and the fusion operation was completed.

The pain, which we now believe to be entirely secondary to the congenital anomalies of spine and spinal cord with degenerative changes in the latter, has not been relieved.

Case 7. *Benign giant cell tumor of the spine with associated lower abdominal pain.* D. G., male, age 27 years, came to the University of Chicago Clinics May 16, 1928, complaining of pain in the left lower abdomen

near the groin and in the lower part of the back, of five months' duration. There was slight tenderness just above the left Poupart's ligament over the inguinal canal, and moderate stiffness in the lower lumbar spine. Roentgenograms of the lower lumbar and sacroiliac joints were normal.

About six weeks after this first admission the patient was standing in the lobby of the Billings Hospital when he felt sudden severe pain in the back and fell to the floor, completely paralyzed from the level of the second lumbar segment. A roentgenogram of the lower thor-



Fig. 3. Case 6., B. K., female, aged 22 years. History of an automobile accident at the age of 11 years. The roentgenogram shows multiple anomalies of the lower lumbar spine, lumbo-sacral-pelvic obliquity and scoliosis. The patient had complained of pain in the right lower abdominal quadrant which had been constant and severe. Two years before her admission to the University of Chicago Clinics her appendix and right ovary had been removed without any relief from the pain. Operation at the University of Chicago revealed a large extradural cyst of the spinal canal which extended from the third lumbar to the third sacral vertebra.

acic and upper lumbar spine revealed an extensive destructive lesion and collapse of the body and appendages of the first lumbar vertebra (Fig. 4-A).

An operation was performed and a portion of the tumor tissue which had extended backwards, involving the laminae and invading, but not infiltrating, the paravertebral muscles, was removed. Microscopic examination revealed a benign giant cell tumor. Roentgen ray therapy was followed by a back-brace, and the patient made an excellent functional recovery (Fig 4-B).

Case 8. *Extramedullary spinal cord tumor causing subacute abdominal pain.* C. S., female, age 28, was admitted to the University of Chicago Clinics (Gastrointestinal Division) February 21, 1934. She complained of pain in the right lower quadrant of the abdomen, of one year duration, and pain in the epigastrium of five months' duration.

During the seven months prior to her admission the abdominal pain became more severe and began to radiate through to the back. She also complained of pain on the anterolateral surface of the right leg which extended to the knee. Five months before admission she vomited a large amount of rusty fluid. Physical examination failed to reveal any abnormal abdominal mass, tenderness, or muscle spasm. The reflexes were reported to be normal. She remained in the hospital for approximately one month during which time she continued to complain of severe pain and there was an occasional emesis. The clinical impression was psychoneurosis. Two weeks after discharge from the hospital she was readmitted because of the repeated attacks of severe lower quadrant abdominal pain which usually came on at night and lasted from two to six hours. Several days before this second admission she was awakened at 11:00 p. m. with the first symptom of pain in the back. This was described as excruciating pain which started in the mid-dorsal region.

She was referred to the Neurological Service where a diagnosis was made of extramedullary spinal cord tumor.

At operation April 14, 1934, a neurofibroma of the right eleventh thoracic posterior root was found and removed. The last report was obtained July 26, 1937—three years and three months after operation, at which time she stated that she had some slight weakness of the leg but no recurrence of the pain or of other symptoms of which she had complained when first admitted to the Billings Hospital.

Case 9. *Tuberculosis of the spine.* Initial symptom right lower abdominal pain. R. J., male, age 13 years, came to the Pediatric Clinic at the University of Chicago, April 25, 1936, complaining of pain in the right side and in the region of the right hip, of four months' duration. Pain in the right side was first noticed approximately one year before coming to the clinic; was intermittent in character; at times disappeared entirely; and when most severe seemed to be relieved, to some extent, by pressure of the hand over the right lower quadrant. There was no nausea or vomiting. His appetite was good and he had been quite active physically, riding a bicycle, doing somersaults and tumbling in the school gymnasium. There was no cough and no weight loss. There were no abdominal masses, tenderness to deep palpation or abdominal muscular rigidity.

A tentative diagnosis of chronic appendicitis was made. Because moderate stiffness of the spine was noted the patient was seen by an orthopedic consultant who found mild spasm of the vertebral muscles and soreness in the right sacroiliac region. Roentgenograms

of the lumbosacral region were normal. A back-brace was ordered.

Five months later a tender swelling in the left flank was first noted. A roentgenogram of the dorsal-lumbar region of the spine revealed a lesion of the second lumbar vertebra with loss of intervertebral disc space between lumbars two and three (Fig. 5-A). A diagnosis of tuberculosis of the spine with iliopsoas abscess was made. October 7, 1936, using a full thickness tibial bone graft, the spine was surgically fused from the twelfth thoracic to the fourth lumbar vertebrae, inclusive.

The patient made an uneventful recovery although there was an interval during which the cold abscess drained freely (Fig. 5-B). The iliopsoas abscesses have now healed and there is roentgenographic evidence of spine fusion. The symptoms of abdominal and low-back pain have been completely relieved.

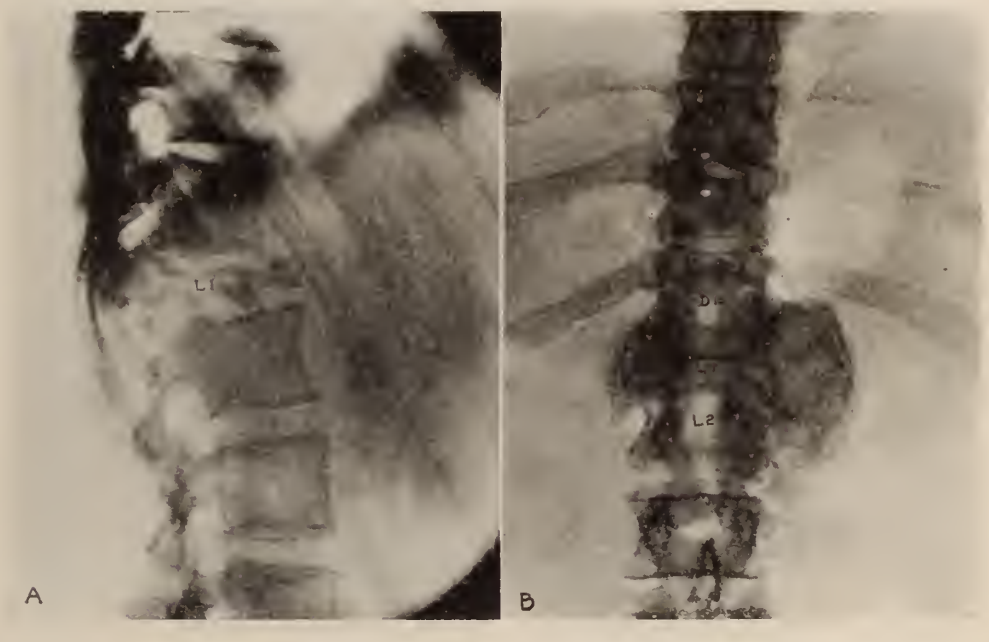


Fig. 4. Case 7. D. G., male, aged 27 years. The lateral roentgenogram of the spine (A) shows collapse and almost complete destruction of the first lumbar vertebra. At operation this was found to be the result of a giant cell tumor. His symptoms had included left lower abdominal pain and pain in the lumbosacral region of the back. The anteriorposterior roentgenogram (B) shows the extensive repair six and one-half years later, with ossification of the tumor and fusion between the 12th thoracic remnant, lumbar one, and the second lumbar vetebrae, which followed extensive x-ray treatment.

COMMENT

Failure to recognize the fact that acute trauma to the spine is a fairly common cause of acute abdominal symptoms, which may be associated with a paralytic ileus, resulted in a needless and dangerous abdominal operation upon an elderly patient who was already in a state of shock (Case 5).

Needless operations for supposed chronic appendicitis are all too frequently performed. They may be due to failure of the attending physicians to be ever alert to the possibility that chronic or intermittent right lower abdominal quadrant pain is sometimes merely the signal announcing the presence of disease in the spine. Case 6 is an example of this type of mistake. In this instance the right ovary was removed, also without any benefit to the patient. Before a correct diagnosis was made this patient was condemned by several physicians as a hopeless psychoneurotic. A more careful physical examination would have revealed definite neurological manifestations, including a cord-type of bladder. This finding should have transferred the focus of attention to the spinal cord itself in spite of peripheral symptoms and deformity of the osseous spine. Diseases of the vertebral bodies with secondary neurological symptoms may also produce the syndrome, as was illustrated in Case 7 in which there was extensive destruction of one vertebral body and adjacent appendages. Again, the attention of the examiner was directed away from the primary lesion because of the fact that pain was most marked in the lower abdomen near the

groin. An earlier diagnosis might have prevented total paralysis which has only partly been relieved by subsequent treatment.

Case 8 is an example of how confusing certain spinal cord tumors may be and how difficult of diagnosis when both pain in the abdomen and nausea and vomiting so completely mask other symptomatology.

Although diagnosis was delayed in Case 9 until he developed an iliopsoas abscess, which could be palpated, he at least escaped an unnecessary abdominal operation. During the five months between his initial appearance at the clinic and the establishment of a correct diagnosis he was protected by a Taylor type of back-brace.

In our series of cases of tuberculosis of the spine in children, there have been four who had been subjected to appendectomies prior to coming to the University of Chicago Clinics, because the symptoms of which they complained included right lower abdominal pain. Treatment of the tuberculosis of the spine did relieve the abdominal pain. This would seem to be reasonably conclusive evidence that the original diagnosis of appendicitis was erroneous.

SUMMARY

Most of the lesions of the spine which have caused intra-abdominal symptoms can be explained on a basis of mechanical irritation or inflammation of nerve roots as they emerge from the spinal canal. The reflex pain syndrome has been discussed by both Mayer and Pottenger. In many of the cases of abdominal pain caused by inflammation due to infection in the spine; as a result of chronic irritation from hypertrophic arthritis; the mechanical factor of impingement from osteophytes; or from displaced portions of intervertebral discs, pain is merely the response to stimulation of the nerve tracts in a root or peripheral nerve. Unfortunately, the clinician



Fig. 5. Case 9., R. J., male, aged 13 years. Initial complaint was pain in the right side and in the region of the right hip of four months' duration. At the time of his first admission a correct diagnosis was not made. He returned five weeks later with the symptoms more marked and a palpable mass in the right lower quadrant of the abdomen and the right flank. This mass proved to be an iliopsoas abscess.

Roentgenogram (A) shows destruction of the posteriorinferior portion of the body of the second lumbar vertebra and loss of disc space between lumbar vertebrae two and three.

Roentgenogram (B). This anteriorposterior view of the spine following operation shows the full thickness tibial bone graft (a-b) further destruction of the second lumbar vertebra with lateral wedging, and in the right lower abdominal region an opaque mass. This mass was produced by the injection of lipiodol into the iliopsoas abscess. This patient has made an excellent degree of recovery with healing of the diseased spine and the iliopsoas abscess, and relief from pain.

may be too much inclined to seek to alleviate the pain or to try to find the pathological condition causing the pain, *only in the location to which the patient points and says that it "hurts."* This attitude disregards the fact that pain is only a symptom manifested at the site of sensory nerve end-organs. The stimulus which causes the pain in the abdomen when the disease is in the spine may be compared with the contact which is made when the doorbell button is pressed in an outer vestibule. The bell may ring within the house at a considerable distance. Thus, sudden compression of the ulnar nerve at the elbow causes pain in the fourth and the fifth fingers of the hand, most marked at the tips. Similarly, irritation of nerve roots within the spinal canal or as they emerge from the spinal canal, or irritation of nerve tracts within the spinal cord itself may cause peripheral symptoms characterized as intercostal neuralgia, sciatica, or intra-abdominal pain, depending upon the region of involvement of the spine or its contents.

Obviously, treatment should be directed toward the primary lesion, whether it is in the central nervous system, on a peripheral nerve, or an organ of the thorax or abdomen. Thus the treatment should be directed to the cause rather than toward ameliorating the effect.

In another report, I have described some of my own errors in diagnosis and have recommended a conservative approach to the problem of treatment for low-back pain. In this paper I have attempted to point out additional pitfalls from which none of us may feel too safe, but which, in many instances, may be avoided by insisting upon accurate histories and complete physical examinations for our patients. Only in this way may we hope to correctly evaluate symptoms and establish accurate diagnoses. Treatment should not be undertaken for patients whose primary complaint is either of abdominal pain or of backache until the symptom complex of viscero-spinal pain has been considered. Thus our sins of omission, because of failure to recognize the possibility of referred pain, will be less numerous and we will commit less often the sin of commission through treating effects when it may be possible to remove the cause.

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DISCUSSION

Dr. George W. Staben, Springfield: Dr. Compere has just shown us that abdominal lesions can produce pain which is referred to the spine, and also that spinal lesions can cause symptoms which are referred to the abdomen.

Referring to spinal lesions which cause pain referred to the abdomen, he described a symptom-complex sometimes called the orthopedic abdomen, a condition in which pain in the abdomen is the predominating sign of a lesion entirely outside of the abdomen. Among the conditions mentioned are infections of the spine including arthritis, tuberculosis and syphilis of the spine. He also mentioned spinal cord tumors and acute injuries of which fractures and herniation of the nucleus pulposus into the spinal canal are important. All of these lesions have one thing in common, that is, irritation to the spinal nerve roots or radiculitis. As he mentioned, the symptoms of radiculitis are essentially those of a referred pain, the pain being referred to the distribution of the particular nerves involved.

In those lesions in which the referred pain is in the abdominal region, the site of the lesion should be in that part of the spine between the seventh dorsal and the first lumbar vertebrae. The spinal nerves which have their exit in this region, after transversing their respective intercostal spaces, give off motor and sensory branches to the abdominal muscles, so that irritation of their nerve roots would cause pain, referred to the abdominal muscles. When such pain is present, of course the matter of diagnosis is important from the standpoint of treatment. In general, the various lesions mentioned have their own particular group of signs and symptoms with the addition of the symptoms of radiculitis when the spinal nerve roots are involved. When pain is produced as a result of spinal nerve root irritation, especially where pain is referred to the abdomen, if it is the result of root irritation, pressure on the abdominal muscles will not increase the pain, whereas if the lesion is in the abdomen, pressure on the abdominal muscles will increase the pain. This

may be useful in making a differential diagnosis. Also, anything which increases the spinal fluid pressure such as coughing, sneezing, etc., will increase and aggravate the abdominal pain. When we see children with chronic abdominal pain we should think of the possibility of tuberculosis of the spine.

One of the early signs of spinal cord tumors is irritation of the spinal nerve roots with referred pain which is very persistent and well localized. Arthritis of the spine may cause irritation of the spinal nerve roots. I recall one such case that I have seen in which the patient complained of chronic abdominal pain which was thought to be appendicitis. Upon investigation she was found to have arthritis of the spine. Spinal fracture may cause symptoms of radiculitis. However, we see many compression fractures of the spine without spinal cord involvements in which there is not referred pain. Spinal fractures, however, may and do sometimes cause referred pain of this character. I have such a case under observation at this time; a patient who had received a severe blow on his back, the result of a fall of slate striking him, who entered the hospital in a semiconscious condition and did not respond to questions. It was very apparent that he was suffering from a rather diffuse pain over the back, but more apparent was the complaint of pain in the abdomen which appeared to be diffuse. However, the pain appeared to be more persistent or more intense in the umbilical region. The abdominal muscles were moderately tense, the abdomen moderately tympanitic. The white count was 18,000. We felt that the white count was of little value since in cases of this type we do find a leukocytosis which accompanies shock. Because of the moderate distension and tenseness and the apparently extreme abdominal pain, we felt that he might have an intra-abdominal injury. We did not send him to the x-ray room, feeling that it was probably safer to put him to bed until he recovered from his shock. However, we had an x-ray picture taken with a portable x-ray unit to see whether or not we could demonstrate free air in the abdomen. The picture was unsatisfactory, since we were obliged to take it with the patient lying in the prone position instead of upright. We also took a bedside picture of the spine which showed what might be interpreted as a fracture of the spine. This picture was not diagnostic. Catheterization showed the bladder to be intact. We watched this patient very carefully, examining him at frequent intervals, for the intense muscle spasm such as is demonstrated when peritoneal insult is great. The abdomen did not show any increase in muscle spasm during this period. The pulse rate remained low, at no time above 90. The temperature was never over 100. So after several hours we felt that we did not have an abdominal lesion but a spinal lesion which was causing irritation of the spinal nerve roots and pain referred to the abdomen. Later we obtained an adequate picture of the spine which showed a compression fracture of the eleventh dorsal vertebra. The spine was placed in hyperextension and the abdominal pain gradually subsided and disappeared in the course of a week.

In conclusion, I want to emphasize the fact that where chronic abdominal pain exists, in which the symptoms are not definite, we should not overlook the possibility of some spinal lesion causing referred pain.

Dr. E. C. Holmblad: I just wanted to mention the experiences we have had with hernia recently in connection with back pain. We have had the experience of having about 60 per cent. of the acute hernias that come in, having pain referred to the back, sometimes starting in the inguinal region and radiating upward and backward to the lumbosacral region. Whenever a back case comes in the first thing we do is examine him for hernia—we turn him around and examine for hernia first. It is interesting to note that.

I certainly want to thank Dr. Compere for bringing out the importance of abdominal distension and abdominal pain in connection with fracture of the spine. It may occur several days later which seems to be frequent. I think the question of intra-abdominal injuries must be ruled out when there has been a fall. Suppose he does have a fractured spine; there may be an associated pathological condition and it is easy to overlook it.

Dr. Sumner L. Koch: The problem of the compression fracture of the spine which can take place when an individual is suddenly and forcibly thrown upward against the roof of the cab is a common one; and the fracture is often overlooked. The lateral roentgenogram tells the story in such an injury.

Dr. Edward L. Compere, Chicago (closing): I will not take any more time but I would like to thank Dr. Staben, Dr. Holmblad and Dr. Koch for their contribution to the discussion.

PNEUMONECTOMY FOR BRONCHOGENIC CARCINOMA OF THE LUNG

Report of a successful case 16 months after operation

W. E. Adams, M. D.

CHICAGO

Since Graham's successful removal of the entire lung for carcinoma of the bronchus in 1933[1] an ever increasing number of successful cases of total pneumonectomy have been reported. Whereas previous to this time the outlook for patients with this condition was hopeless, the mortality now compares favorably with that of malignant disease of other organs. This is all the more important in view of the frequent occurrence of this tumor. Arkin and Wagner[2], from their review of many reports, found bronchogenic carcinoma of the lung to represent six to eight per cent of

From the Department of Surgery of the University of Chicago.

Presented before the Sections on Surgery and Radiology, 98th Annual Meeting, Illinois State Medical Society, Springfield, May 18, 1938.

all carcinomata. Thus the lesion ranks in frequency with carcinoma of the rectum.

A major factor in the advance of the treatment of this condition has been the recognition of early lesions. The onset is usually insidious, the symptoms being very mild until obstruction of the air passages with development of an inflammation of the obstructed pulmonary tissue occurs, or until evidence of distal metastases is manifested. A history of unexplained chronic non-productive cough of several months duration is usually obtained. Hemoptysis is also not an infrequent early symptom. Pain, however, may not occur until the lesion is far advanced. Studies of this condition reported in the past dealt mainly with cases diagnosed in the later stages. That phase of the subject will not be discussed in this paper. An unexplained chronic cough in a patient over 40 years of age, with or without hemoptysis, warrants investigation by bronchoscopic examination. X-rays of the lungs during this stage of the condition may be entirely normal. The first abnormal findings on x-ray examination are due to obstruction of the air passages with the production of atelectasis and pneumonitis of the obstructed pulmonary tissue. A bronchoscopic examination in such cases usually reveals the tumor in one of the primary stem bronchi. Thus, bronchoscopy with biopsy of the tumor has been a major factor in making an early diagnosis.

Determination of Operability—Various opinions have been given as to the factors determining the operability of carcinoma of the lung. The majority of these tumors are located in the main stem bronchi. Those located in the more peripheral portion of the lung usually involve the pleura or other peripheral structures before a diagnosis can be made, a fact which precludes surgical intervention.

Tumors arising in the major stem bronchi have been classified into three groups according to the microscopic appearance, i. e., 1. Squamous cell carcinoma; 2. Undifferentiated round cell carcinoma; and 3. Adeno-carcinoma. Of these three types the squamous cell presents the most favorable outlook. There is a somewhat less tendency to early metastases and also to progress less rapidly in its growth. The lack of definite evidence of distal metastases on physical and x-ray examination warrants an exploration of the pleural cavity. The amount of direct extension of the tumor at the hilum will determine whether all of the carcinoma-bearing tissue can be removed. If it is impossible to extirpate all of the primary tumor the case is inoperable.

The presence of metastases in the bronchial lymph glands has been said by some to contraindicate extirpation of the lung.[3] However, not infrequently when several glands at the hilum and in the mediastinum are removed, only a portion are found to be involved by the tumor, and when such cases are denied the opportunity of operation all hope for recovery is gone. It is a well-recognized fact that removal of a primary malignant tumor is not infrequently accompanied by a cessation in growth for months or years of secondary metastases. Also it may well be that removal of all the mediastinal glands in this region removes all of the spread of the tumor beyond the primary growth and should be carefully considered in each individual case.

TYPES OF OPERATON

The two operations which have been successfully performed in the treatment of this condition are lobectomy and pneumonectomy.[4] Tumors lying distal to the primary bronchi of the individual lung lobes lend themselves to treatment by removal of a single lobe. Unfortunately this is usually not the case and extirpation of the entire lung on that side is necessary in order to include all of the cancer-bearing tissue. During the past five years improvement of the technique of pneumonectomy has been such that the mortality of this operation compares fairly favorably with that of lobectomy. Thus, if the adequacy of a lobectomy to include all of the tumor is questionable, pneumonectomy should be the operation of choice. When a pneumonectomy is performed it is accompanied by a careful dissection of the hilum with individual vessel ligation and removal of the lymph glands in this region.[5]

PREOPERATIVE PREPARATION

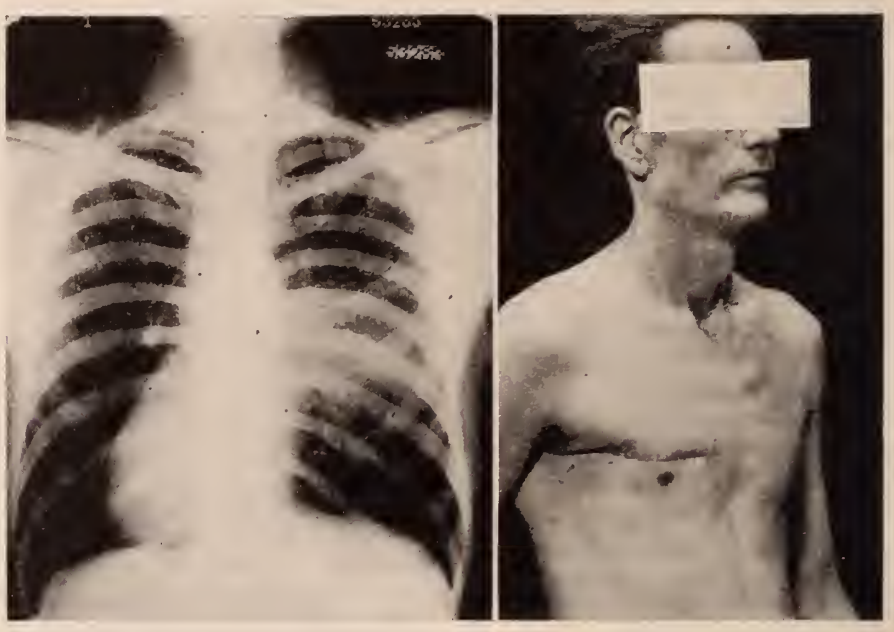
Careful preoperative preparation of the patient has contributed much to the success of pneumonectomy. Blood transfusions and a nourishing diet will improve the general condition of the patient. In order to stabilize the cardiorespiratory physiology so that during and following the operation embarrassment of this function will not occur a preliminary pneumothorax is pro-

duced on the side of the lesion, the lung being collapsed as well as possible, and this collapse maintained over a period of from 10 to 20 days.

OPERATION

There still remains some controversy as to the advisability of intratracheal anesthesia during this operation. However, it has been amply demonstrated that simple inhalation mask anesthesia supplies sufficient positive pressure for maintaining normal cardio-respiratory function in the presence of a surgical (open) pneumothorax. Contamination of the lower trachea and bronchi with mouth organisms is also less apt to occur than when intratracheal catheter anesthesia is employed.

The operation is usually performed through an incision made in the third intercostal space anteriorly. By the use of a rib spreader adequate exposure without the resection of ribs is obtained. This location provides good visualization of the anterior aspect of the hilum of the lung, which aids materially in a careful dissection and individual ligation of the blood vessels. Where infection following operation is expected, a posterior incision is thought to be more advisable since the muscles here aid in maintaining a closed pleural cavity following the operation. The phrenic nerve is divided to paralyze the diaphragm. This aids in the performance of the operation and decreases the size of the space remaining following extirpation of the lung. With the removal of the lung the bronchus is closed by interrupted sutures with or without transfixion sutures,[6] and buried by closing the mediastinal pleura. Drainage of the pleural cavity is not carried out if a postoperative infection of the pleural cavity is not anticipated. No attempt is made to overdistend the remaining lung to partially fill the space left by the extirpated lung. Careful asepsis is maintained during the division of the bronchus, the mucosa being painted with some antiseptic solution when the bronchus is cut across.



1. X-ray of chest on admission (12-28-36). Note homogeneous density whose outline is not clearly defined extending outward from the right hilum. This is characteristic of atelectasis and pneumonitis resulting from bronchial obstruction.

3. Photograph of patient three and a half weeks following removal of right lung. The incision healed by primary intention.

POSTOPERATIVE CARE

A blood transfusion as a routine will help to prevent shock and shorten convalescence. Intravenus or subcutaneous salt solution and glucose will maintain an adequate water and mineral balance. A sero-hemorrhagic exudate develops and gradually fills the pleural space left by the lung removed. The air is gradually absorbed and

the space markedly diminished in size by the elevation of the diaphragm, deviation of the mediastinum toward the side of operation and shrinkage of the chest wall. Determination of the pressure in this space may indicate that air should be aspirated following closure of the chest. It is usually unnecessary however, to remove either air or exudate from this region.

CASE REPORT

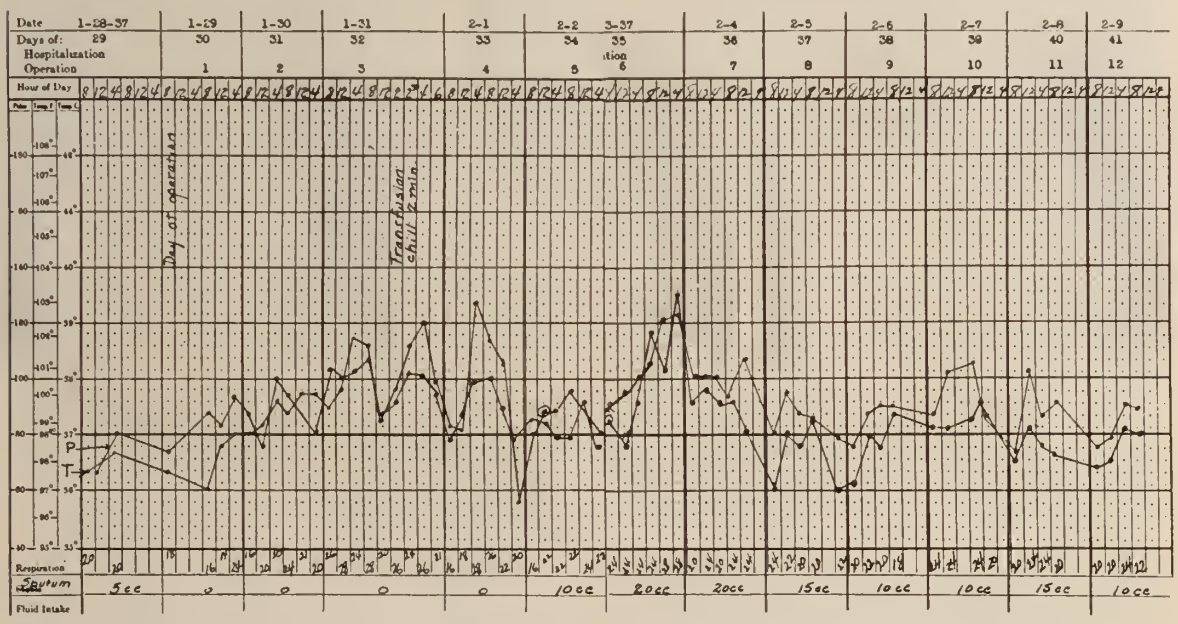
CC. (166,063) a white male, aged 42, was first seen on 12-31-36 complaining of cough, night sweats, and hemoptysis of two months duration. He had lost 20 pounds in weight during the preceding year. The patient worked in the lacquer department of a paint company. Two months prior to admission he saw a doctor because of a severe cough. A diagnosis of bronchitis was made and a cough medicine prescribed. His cough became worse and he was obliged to quit work. When his cough became quite severe and prolonged he would raise some thick sputum and occasionally some bright red blood. The cough medicine was changed but no x-rays were taken. A few weeks before admission he began to perspire profusely and felt feverish in the afternoon. The temperature was found by the physician to be as high as 100° to 101°.

Physical examination revealed a fairly well-nourished male who appeared to be chronically ill. The head, neck, abdomen and extremities revealed no abnormal findings. His blood pressure was 140/85, pulse 90, and his temperature 98°. The chest presented an area of decreased resonance in the region of the right middle lung lobe. Breathing in this region was bronchovesicular to bronchial in character. A few fine rales and many rhonchi were present. Elsewhere the lungs were clear. The diaphragm moved normally on either side.

Laboratory examinations: W.B.C., 12,200; R.B.C., 4.50; Hb., 92. Blood Wassermann and Kahn, negative. Urine, normal. Examination of the sputum revealed no tubercle bacilli. An x-ray of the chest revealed a homogeneous density whose margins were not sharply defined extending outward from the right hilum (Fig. 1).

General impression—Carcinoma of the right lung.

On 1-2-37 a bronchoscopy by Dr. Lindsay revealed the opening of the middle lobe bronchus to be slightly compressed from before backward. On the wall of the main stem bronchus opposite to the opening of the middle lobe some granular appearing nodules were seen. These were not large, and two pieces were taken for biopsy. The lower lobe bronchus was smaller than normal but presented no other abnormality.



2. Temperature chart showing mild postoperative course following total extirpation of the right lung.

Microscopic examination of the tissue removed revealed atypical proliferation of epithelial cells showing mitotic figures.

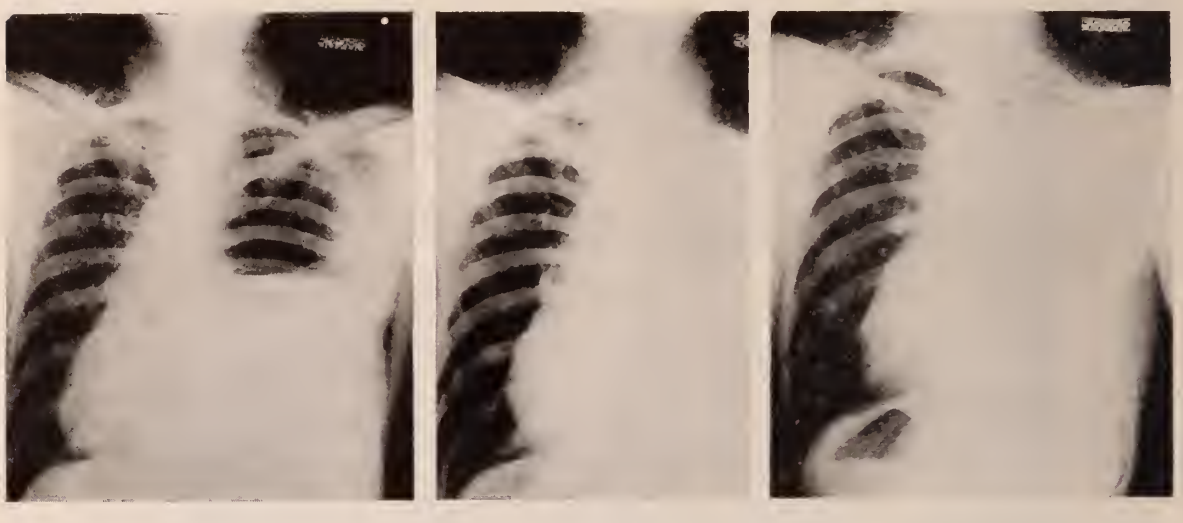
Diagnosis: Bronchogenic carcinoma of the right lung.

Preoperative preparation—The right lung was collapsed by pneumothorax beginning on 1-9-37. Complete collapse was obtained in seven to ten days and continued until 1-28-37. Seven refills being given during this period.

Operation—On 1-29-38 a right pneumonectomy was performed. Morphine, gms. 0.01 was given preoperatively. Ethylene-oxygen administered by mask was the anesthetic used during the entire procedure. An incision was made from the right edge of the sternum

to the right mid-axillary line over the third interspace (Fig. 3). This was carried through the skin and subcutaneous tissues, the pectoralis major muscle being divided longitudinally in the direction of the fibers, and the right pleural cavity was opened through the third interspace. The edges of the wound were protected by gauze packs saturated with a 1-1000 solution of acroflavin. A rib spreader was inserted and the opening increased in size sufficiently to permit adequate exposure without the resection of ribs or cartilages. The right lung was entirely free from the chest wall with the exception of some dense adhesions posteriorly and mesially. The phrenic nerve was crushed with a hemostat in order to paralyze the diaphragm. The hilum by approximating the edges of the mediastinal pleura. Closure of the chest wall was accomplished by three double strands of number two chromic catgut sutures placed about the third and fourth ribs. The intercostal muscles and deep muscular tissues were then approximated with a continuous suture of zero chromic catgut suture. Interrupted sutures of 00 chromic catgut were used for the subcutaneous tissue and the skin was closed with silk. No drains were placed in the pleural cavity.

The patient's condition was very satisfactory throughout the operation. The blood pressure remained above 100 and his color and respiration were entirely satisfactory.



4a. X-ray of chest ten days following operation. Note fluid and air in right chest with little shift of the mediastinal structures. Note subcutaneous emphysema beneath right axilla. This was gradually absorbed.

4b. X-ray of chest three months following operation. Note mediastinal shift to the right with narrowing of the right intercostal spaces. The air in the right chest has been replaced by a sterile exudate.

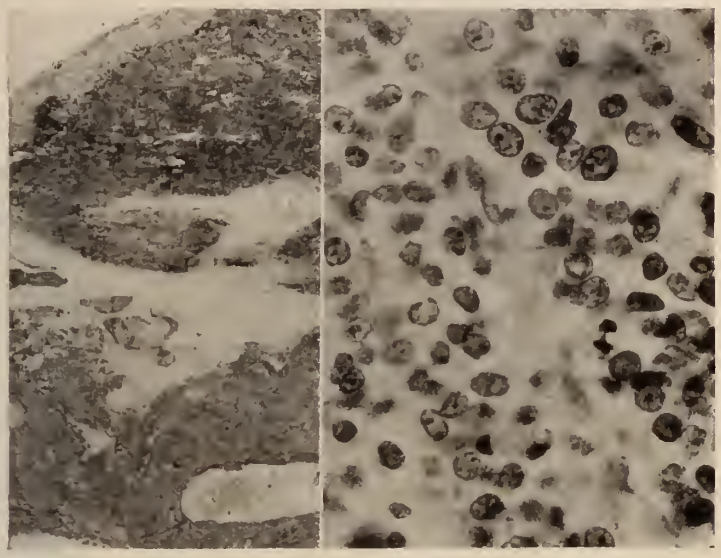
5. X-ray of chest 12.5 months following operation. Note similarity to Fig. 4b.

of the lung presented a large gland lying anterior to the bronchus in the region of the carina. Another mass, the size of one's thumb, was palpated posterior to the bronchus within the lung substance. No definite evidence of metastases on the surface of the lung or in the surrounding tissues was noted. Careful dissection of the hilum, mostly within the mediastinum, was carried out and the vessels after being dissected free, were doubly ligated proximally and a single ligature placed distally and divided between. The bronchus was then mobilized to the carina and after the application of a lobectomy tourniquet the lung was removed. Iodine was used to sterilize the bronchial opening as it was cut across. The lumen of the bronchial stump was then cauterized with a 35 per cent. solution of silver nitrate. Closure was accomplished by interrupted zero chromic catgut sutures. The tourniquet was then removed, and the first row of sutures was buried by inverting the stump with three or four mattress sutures of the same material. Several mediastinal glands were then dissected free and the mediastinum partially closed

Postoperative course—The patient had a very uneventful postoperative convalescence (Fig. 2). The wound healed by primary intention (Fig. 3) and the pleural cavity remained sterile. There was a gradual accumulation of a serosanguineous exudate in the right pleural space with absorption of the air remaining, following the operation (Fig. 4a). The patient received a blood transfusion of 500 cc. of citrated blood on the second postoperative day. The temperature rose to 102½° following the transfusion and to 103° the following day, after which it remained below 100 during the remainder of the convalescence. There was no dyspnea or cyanosis at any time. The patient was allowed to get up on the 18th postoperative day and deep x-ray therapy was begun on the 8th of March, five weeks following operation. A total of 2852 R units were given in nine administrations directed over the front and back of the mediastinum. He was discharged from the hospital on the 48th day following operation and was seen thereafter in the out-patient clinic. The vital capacity at this time was 1800 cc. At the end of two

and one-half months he returned to his work and has continued to work six to eight hours a day since that time. The air in the right pleural cavity was completely absorbed by April 23rd. X-ray examination of the chest at that time revealed deviation of the mediastinal structures toward the right side with some





6a. Right lung, mediastinal surface, showing obstruction of middle lobe bronchus by tumor.

6b. Low power microscopic appearance of bronchial wall. Note tumor infiltrating parenchyma beneath cartilages and collapse of lung tissue at periphery. High power (x1100) magnification reveals typical squamous cells in several stages of mitosis.

elevation of the right diaphragm and definite narrowing of the right intercostal spaces (Fig. 4b). The anteroposterior dimension of the right chest was much less than that of the left. The only symptom at that time was some dyspnea on marked exertion. The patient has remained in good condition ever since.

Pathological specimen—Examination of the specimen revealed a hard mass measuring 2x3 cm. in the region of the right middle lobe bronchial opening. Pressure outside of this opening almost occluded the lumen of this bronchus (Fig. 6a). Microscopic sections revealed a squamous cell carcinoma of the lung (Fig. 6b).

On examination of the mediastinal glands, the largest measured 1½ cm. in diameter and was almost completely replaced by metastases. The others were normal. The microscopic appearance of these metastases was identical with that of the original tumor.

A second case of bronchogenic carcinoma of the lung was recently explored and the tumor found to be operable. A total pneumonectomy of the left lung for a carcinoma arising in the left primary bronchus of a man 58 years of age was performed on 2-21-38. The patient made an uneventful recovery following an operation similar to the one just described.

Both patients included in this report are well and reveal no evidence of local recurrence or metatases at this time, October 20, 1938, 21 and 8 months respectively following operation.

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MILK SICKNESS

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There is ample evidence that the incidence of milk sickness and its confrere "trembles" is insignificant today when one makes comparison with the ravages inflicted by the disease as gleaned from early American history. During the past fifteen years only nine scientific articles have appeared on this subject, suggesting infrequency of occurrence, but certainly not rarity. Since the disease does occur at intervals it must of necessity take its place among other public health problems. In those districts in which cases

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are prone to occur there must be alertness on the part of physician and health officer since early recognition may result in the obviation of fatality, and knowledge of the existence of milk sickness may be conveyed to those who are unaware, in order that proper preventive measures might be instituted and so lower the potentiality of future occurrence. In view of the fact that four known outbreaks of this disease occurred in the state of Illinois during the years 1936 and 1937 with twenty-one cases and two deaths, it was thought that a reopening of this subject would be pertinent and timely.

The historical phases of milk sickness have been so well covered by the previous articles referred to in the accompanying bibliography that no reference will be made in this presentation. Those who are interested in this aspect of the disease are referred to publications by Drake,[1] Rawlings[2] and Hansen.[3]

Since Drake[1] first described milk sickness much of the mysticism enveloping the cause of the disease has been removed. Evidence as accumulated by Wolf, Curtis and Kaupp[4] and Couch[5,6] would seem to prove conclusively that this pathologic condition is due to trematol, one of the toxic constituents of white snakeroot (eupatorium urticaefolium). This substance is an aromatic straw-yellow oily liquid which is insoluble in water, acid and alkali, but soluble in common organic solvents such as alcohol, ether, chloroform and benzene. Boiling destroys its poisonous properties, but temperatures of pasteurization have little or no effect. Pasteurization of milk therefore has no protective action. Trematol is a cumulative poison and therefore the importance of early diagnosis cannot be overemphasized. While less than the lethal dose may cause only slight symptoms, repeated small amounts at intervals may result in typical poisoning. Couch[6] has described a test for the detection of trematol.

Milk sickness in man and "trembles" in domestic animals are of course identical. Animals acquire the disease by eating white snakeroot. Man acquires the disease by consuming milk or milk products from animals that have been eating the plant. It has been thought that man might become affected by eating meat from animals having this disease. Experiments by Wolf, Curtis and Kaupp[4] and by the United States Department of Agriculture[7] failed to substantiate this fact. It is probable that the high temperature at which meat is ordinarily cooked would serve as a protective mechanism against such occurrence. Horses, cattle and sheep are relatively susceptible to white snakeroot poisoning. Lactating animals are less affected than those which are not lactating. Milk from such animals, however, will serve as an excellent intermediary agent of transfer to man. Guinea pigs are susceptible, but hogs are highly resistant. Because of the resistance of the porcine family it is common practice to feed hogs with milk from cows known to have fed on white snakeroot, pending complete elimination of trematol from the cow.



Fig. 1. Typical wooded area infested with white snakeroot in Perry County.

Trembles appear only in pastured animals—usually horses, cattle and sheep. The plant is not well liked by these animals, but lack of forage due to drouth or overpasturing will result in animals utilizing white snakeroot for food. White snakeroot grows extensively in woods, swampy areas, shady ravines and groves along streams. In every outbreak investigated by us the animals had been turned into a wooded area due to lack

of any other means of nourishment. Figure 1 shows one such typical area in Perry County, and Figure 2 shows the type of pasture land responsible for the Effingham County outbreak. Figure 3 shows a sample of snakeroot obtained by us during one of our investigations. From this picture some of the plant characteristics are seen, such as the fact that the leaves are opposite and



Fig. 2. Typical wood area infested with white snakeroot in Effingham County.

each leaf possesses three main ribs or veins. Figure 4 shows the unusual height to which the plant can grow which is over five feet in this case. The fibrous matted condition of the roots is also well exemplified in this picture.

Cases of milk sickness have been reported during the past ten years by Lambert,[8] Hardin,[9] Milam,[10] Knight,[11] Richardson,[12] Bulger, Smith and Steinmeyer,[13] Walsh[14] and Hansen[15]. The symptoms most commonly described and seemingly characteristic in order of occurrence were, weakness or prostration, pernicious vomiting, severe constipation and epigastric pain. The temperature was characteristically normal or subnormal. Muscular pains were common. There was marked thirst, the urine was scanty, frequently showing acetone, and the breath had a distinct acetone odor. Flushed cheeks and undue



Fig. 3. Sample of snakeroot obtained during one of our investigations.

redness of lips and tongue were not infrequent. Swelling of the tongue was commonly experi-



Fig. 4. Sample of snakeroot showing unusual height of plant and typical fibrous matted condition of roots.

enced by the patient. In fatal cases, coma and

convulsions preceded death. In recovered cases, weakness persisted for days, weeks or even months depending upon the initial severity of the illness. A rather constant symptom noted by patients was trembling or even prostration on exertion. Cases, seemingly recovered, might relapse if undue physical exertion was practiced too soon. It can be seen that the symptoms in our series of cases are in accord with those experienced by others. In our tabulation we have called attention to facts other than symptomatology because of their pertinent nature. There was evidently a direct relationship between the quantity of milk or milk products consumed and the severity of the disease. In every case a heavy intake of milk, cream or butter resulted in exaggerated symptoms. The mild cases drank but little milk or buttermilk. The severe cases drank large amounts of milk and cream or ate large quantities of butter. The most serious cases in our experience were the heavy butter eaters. The two fatal cases drank about six glasses of milk per day and used excessive amounts of butter. In one family the mother was the only one to escape illness, and in her case no milk or cream was consumed and very little butter. We call attention to the presence of symptoms in the domestic animals because in every instance such symptoms had been noted for a varying period before the family was affected, and not uncommonly there had been actual loss of livestock. We call attention to the presence of white snakeroot because we feel that identification of the plant is an important adjunct to diagnosis of the disease. A triumvirate of characteristic symptoms in humans, history of symptoms in animals or loss of livestock, plus identification of white snakeroot in the pasture area should prove conclusively that the illness was one of milk sickness. The Couch test[6] for trematol has not proved of value to us in testing for its presence in milk from cows presumably responsible for the outbreaks. This should in no way be considered as invalidating the test, be-

TABULATIONS OF CASES ACCORDING TO SYMPTOMS AND OTHER PERTINENT INFORMATION

Cases	Weakness	Vomiting	Constipation	Trembling on Exertion	Muscle Soreness	Epigastric Pain	Thirst	Swelling of Tongue	Coma	Mild (M) or Severe (S)	Recovery (R) or Death (D)	†Dairy Products Consumed	Symptoms in Animals	White Snakeroot Present
M. I. J.	*P	P	?	P	?	P	P	A	A	S	R	M	YES	YES
L. P. J.	P	P	?	P	?	P	P	A	A	S	R	M	YES	YES
M. J.	P	P	P	P	?	P	P	A	A	M	R	M	YES	YES
V. J. J.	P	P	P	P	?	P	P	A	A	M	R	M	YES	YES
E. E.	P	P	P	P	P	P	P	A	A	S	R	M	YES	YES
M. E. E.	P	P	P	P	P	P	P	A	A	S	R	M	YES	YES
K. E.	P	P	P	P	P	P	P	A	P	S	R	M	YES	YES
D. E.	P	P	P	P	P	P	P	A	A	S	R	M	YES	YES
John E.	P	P	P	P	P	P	P	A	A	S	R	M	YES	YES
Jas. E.	P	P	P	P	P	P	P	A	A	S	R	M	YES	YES
P. H.	P	P	P	P	P	A	P	P	A	M	R	C B	YES	YES
G. H.	P	P	P	P	P	P	P	P	A	M	R	C B	YES	YES
H. C. H.	P	P	P	P	P	P	P	A	A	M	R	C	YES	YES
M. J. H.	P	P	P	P	P	A	P	A	A	M	R	C	YES	YES
F. E. H.	P	P	P	P	P	A	P	A	A	M	R	M	YES	YES
A. S.	P	P	P	P	P	P	P	P	P	S	D	M B	YES	YES
C. S.	P	P	P	P	P	P	P	P	P	S	D	M B	YES	YES
A. S.	P	P	P	P	P	P	P	A	A	M	R	M	YES	YES
Al. S.	P	P	P	P	P	P	P	A	A	M	R	BM	YES	YES
Fr. S.	P	P	P	P	P	P	P	A	A	M	R	M	YES	YES
Fa. S.	P	P	P	P	P	P	P	A	A	M	R	M	YES	YES

*P.....Present
A.....Absent

†M.....Milk
B.....Butter
C.....Cream
BM.....Buttermilk

cause of the fact that the test is not positive does not mean that the milk is not responsible for the illness.

Summary

Milk sickness is a disease of the pioneer days in Illinois. Its occurrence is now rare. Its symptomatology is described. Its relationship to milk and milk products is discussed. Its relationship to white snakeroot is mentioned.

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cause by the time the tests were made too much elimination may have occurred to leave sufficient residue which would have given a positive reaction.

In considering the treatment of milk sickness much basis exists for modern therapeusis if one considers the chemistry of the intoxication as pointed out by Hardin,[9] namely: "The poison counteracts the ability of the organism to change the glycogen stored in the liver to glucose or neutralizes insulin, more probably the former. When glucose is given intravenously, this overcomes the shortage of available glucose or overcomes the hypoglycemia and hyperlipemia, thereby helping to overcome temporarily the effects of trematol." In general, treatment consists of saline purgation, fluids, alkalies by mouth, glucose intravenously and enemata. The old remedy of brandy and honey finds some basis in the statement of Hardin[9] who says: "The administration of alcohol causes an ester of trematol to be formed which is less toxic. If the patient becomes overheated before the ester is excreted, a hydrolysis of the ester occurs, liberating the poison." Emphasis should also be placed on the convalescent not performing strenuous physical labor too soon. Relapse is not uncommon following too early return to fatiguing occupation.

Just as in many other diseases prevention would seem to be the most logical solution to the problem. Basically, first consideration must be given to eradication of the weed. Since white snakeroot is perennial, mere cutting is of no avail. In small areas with limited infestation the plant should be pulled in August or September when the plants are in bloom, and repeated in October. The plants should then be allowed to dry and subsequently be burned to destroy the seeds. In large heavily infested pastures where pulling is impractical, the stock should be moved to satisfactory grazing areas from July first to December first. Milk should not be used from cows pastured in suspected areas, or rather milk cows should not be pastured in such areas. It should be borne in mind that trematol may be transmitted through the milk of cows which have been grazing on white snakeroot and which do not show any symptoms of trembles. Therefore, utilizing the appearance of symptoms in animals as an indicator of when to cease employing milk for human consumption would obviously be impractical. As has previously been stated, pasteurization of milk does not protect against trembles, because the toxic principle is resistant to temperatures lower than boiling. All cases observed by us and studied by us in the literature occurred in families producing and utilizing their own dairy products and not among families in communities dependent upon local dairies for milk supply. This would suggest, and is in accord with previous observations, that there is little if any danger to communities having large milk consumption, if milk containing trematol should reach the distributors, because the dilution factor would keep the per capita intake of this substance far below the toxic threshold.

SUMMARY

A review of the literature and salient features of milk sickness or "trembles" has been presented. The clinical and public health aspects of twenty-one cases which occurred in Illinois during the years 1936 and 1937 have been discussed. The four outbreaks studied occurred in rural areas in Perry, Shelby, Wabash and Effingham Counties. Of the twenty-one cases two terminated with fatality. While the disease is not common, nevertheless cases occur with sufficient frequency to warrant alertness on the part of physicians and health officials in districts known to be infested with white snakeroot.

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DISCUSSION

Dr. J. S. Templeton, Pinckneyville: I want to congratulate Doctor Gowen for his very complete presen-

tation of the incidence, cause, symptoms and results of the disease known as milk-sickness.

Though I was born, grew up and practiced many years in milk sick territory and treated milk sick patients, there is little left for me to say about them.

In my youth we knew much of the symptoms of the disease and knew that it was contracted by drinking milk from cows that pastured in certain areas of Perry County; we knew that milk from cattle that run at large was more dangerous in dry weather. We did not know that it was from snakeroot or any other weed.

The patients I treated all had a strong acetone odor and among the older citizens of our community some claimed to be able to make a diagnosis of milk sickness in either man or beast by the odor of their breath. Then again some would vigorously exercise animals to ascertain if they had the trembles, a positive symptom.

As Dr. Gowen has said, wet seasons are not dangerous but in Perry County it is often so dry in May and June stock have become infected. I have known several persons to die of this disease in early summer. It is well known in our milk sick areas that cattle, sheep or horses should not be turned on pastures containing unbroken wooded land. Once cultivated our pastures have proven safe.

The prevailing opinion is that the disease is not transmitted by the eating of meat. Buzzards, dogs and wild life devour the carcasses of animals dying of milk sickness and do not suffer. I have seen flocks of buzzards swarming over milk sick areas during dry fall seasons before Illinois had stock laws and the woods and creek bottoms pastured many cattle and sheep.

Compelling every man to pasture his stock on his own farm did much to check the milk sickness. He would not fence a wooded area for pasture if he suspected it might have Virginia snakeroot.

Prevention is without doubt the best solution; cultivation of all suspected areas is in my opinion the only sure way of making sure of prevention. We all forget and there will be an occasional return until all snakeroot of the poisonous type is eradicated.

The treatment of milk sickness has been well covered by Dr. Gowen. Many years ago whiskey was freely used but a mistake was made in limiting the water intake. Because animals would get to water if possible and die near a stream or pond it was concluded that water was detrimental and hence was withheld. All of the patients observed by me were dehyrated and only by intravenous feedings of glucose were we able to relieve many of them. Sick and painful stomachs prevented ordinary feeding and the glucose given intravenously furnished both food and water. Alkalies by mouth were conforting if retained. Mineral oil, if retained, gave some relief for the constipation but frequent enemata was more reliable. One patient that died had a large liver and spleen. Those who died from acute effects of the poison usually had convulsions.

Neither Dr. Gowen nor I can paint a real picture of a family with from two to five suffering at one time with milk sickness. We can only tell you that it is heart-rending and while modern therapeutics and medical science are of unspeakable help, much of the horrors of this loathsome disease have been present in our recent experience with it. Let us put forth every effort to extinguish it entirely.

SOME PRACTICAL SUGGESTIONS IN THE CONTROL OF VENEREAL DISEASES

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A great deal has been written on the subject of syphilis control, but the majority of the articles have been of a general rather than a specific nature.

This paper will deal with a discussion of the problems frequently encountered by field workers and investigators, and will attempt to offer some practical suggestions for their solution. Though some of the ideas presented may not be entirely new, it is hoped that reiteration and emphasis may bring about a new interest in the coordination of all forces engaged in the control of syphilis.

The major points to be stressed in this paper are:

1. Dissemination of specific information.
2. Methods of tracing contacts and sources of infection.
3. The control of unauthorized agencies for medical advice.
4. The teaching of prophylaxis.

1. *Dissemination of Specific Information.* The first and most important step in the control of venereal diseases is an extensive campaign of health information. This campaign should be limited not only to adults who have already had sex experience, but should begin with the youth in the upper grades of grammar schools and should continue into the high schools, colleges, universities and youth organizations. Bureaus of information should be set up in every community to disseminate knowledge among the laity.

An efficient control program of any communicable disease, and particularly of a venereal disease, requires the cooperation of every individual in the community. Such cooperation may best be procured by an intensive program of public

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health. The laity should be informed of the various measures employed by local health authorities in the control of infectious diseases. The public should be made to understand that the control of infectious diseases aims at restoring health to the affected individual and protecting the well from becoming infected. If such knowledge is sufficiently impressed upon the public mind there will be few non-cooperative individuals.

The war on venereal diseases must be carried on simultaneously and persistently in all sections of the community. No quarter or organization should be left untouched. In a campaign of this kind, all medical, public health and nursing forces should be mobilized. In fact, to develop the right attitude toward venereal disease and to disseminate the proper information, all leaders of the community must be drafted into service. So only will the scourge of syphilis eventually be eradicated.

The light of scientific inquiry and public interest now being focused on the investigation of venereal diseases are helping to remove the fear and stigma previously associated with the mere mention of the disease. But it is just a beginning. The public must be constantly impressed with the fact that venereal disease like any other infectious disease, is not a disgrace, nor necessarily a sign of immorality. As soon as the feeling of sensitiveness and fear is dispelled the barrier of fearfulness that stands between the patient and the physician will disappear. Public health education which has succeeded in removing the sensitiveness formerly associated with the contraction of tuberculosis can do the same with venereal diseases.

Many people are under the impression that when they consult a physician for the treatment of a venereal disease, their names and addresses are immediately reported to the local health authorities, making their disease publicly known. The fear that he may be reported to his employer with subsequent loss of position has kept many an infected person from securing the necessary medical treatment. These erroneous notions should be corrected at the outset. The public must be assured that names and addresses are required by the physician, only for his private medical records, and, like all other confidences entrusted to a physician, are not revealed. Furthermore, when a doctor reports a case to the Health Department he does so only by a key number, without disclosing the patient's identity in any way. It is only when the patient does not protect himself and others by continuing treatment until discharged that the physician feels called upon to report the case by name. This act is not done maliciouly but to protect both the patient and society. Even in change of physician the name of the patient need not be reported to the health authorities if the former doctor communicates with the new one.

It cannot be stressed too often that venereal diseases are curable, provided the patient gets the proper medical attention early enough and follows it up persistently until discharged. Nor can it be emphasized too strongly that the patient who is infected with a venereal disease and takes regular treatment is much less of a menace, from the social and economic point of view, than one who tries to conceal his condition. It would be well for the public to know that from eight to ten injections of neo-arsphenamine may render a patient temporarily non-infectious.

2. *Methods of Tracing Contacts and Sources of Infection.* From an epidemiologic point of view any campaign for the control of infectious diseases is doomed to failure unless every infection is carefully traced to its original source, and all contacts are put under observation. It is a well-known fact, that tracing a source of infection is one of the most difficult and distasteful phases of venereal disease control. Almost every patient feels that the manner in which he contracted his infection is his own personal affair, and he resents being quizzed about it. Frequently, a doctor, upon inquiring about the source of infection antagonizes the patient. "I came here to be treated, not to be cross-examined," is often the answer. As a result the patient may never return for subsequent treatments.

The first step in overcoming this resentful attitude is to gain the patient's confidence. This must be done gradually and sympathetically. It might be well to begin by discussing casually the subject of infectious diseases in general, leading up to the consequences of the disease, not only to the patient, but to those near and dear to him. After the physician has won the confidence and co-operation of the patient, he may begin to

approach him about his source of infection and contacts. It is true that such efforts on the part of the physician may consume a great deal of time at the beginning. However, in the end they will be worth while, for the physician will feel that not only has he secured a regular patient, but that he has done something toward the control of venereal diseases.

To reiterate: the best way to win the patient's confidence is to reassure him that neither will his identity be revealed, nor that of his source of infection or contacts; that the investigation is primarily to aid those affected and to prevent communicating the infection to others, for venereal diseases form an endless chain if not checked at the source.

If the source of infection or contacts are brought in by the patient for observation and treatment the physician will not need to submit names and addresses in his report. They will merely be referred to by number. However, if they are already receiving treatment elsewhere their key number may be obtained from the physician or clinic. Only in case of refusal to submit to examination and treatment will the physician be justified in reporting names to the Health Department.

An epidemiologic answer of "unknown" for a source of infection in an acute case of gonorrhea, primary or secondary syphilis, should not be accepted. It is true that many cases of clandestine relationships known as "pick-ups" occur. However, the majority of these have special hotel apartments in various sections of the city, or even maintain special automobiles or taxis for this service. Very frequently a tavern owner knows the girls who frequent his establishment. The tracing of a course of infection should be extended into suburban sections, for a considerable number of patients contract their infections from road houses on the outskirts of the city. If we follow up every new case, in the primary, secondary, or latent stages, we are bound to succeed in locating the majority of the sources of infection and contacts. The social service worker can often render a great deal of assistance in this direction.

A well-organized interurban and interstate system for tracing contacts and sources of infection will render an invaluable service in the control of venereal disease provided that such service is extended to the private physician. Such an organization may function on a reciprocity basis and form a part of the social service system of each locality.

A rehabilitation program for girls who have been diverted into prostitution as a means of earning a livelihood brings up another significant phase in the control of venereal disease, that has, until now, been shamefully neglected. These girls from the standpoint of society, are socially, economically and morally crippled, and should receive the same consideration shown the handicapped and unfortunates in other walks of life.

3. *The Control of Unauthorized Agencies for Medical Advice.* In our nationwide campaign for cooperation, we have solicited thousands of physicians. Unfortunately, however, we have lost sight of the many unauthorized agencies that do not report cases, but which prescribe medication and give treatment without knowledge or diagnosis of the infection.

Listed among this group are druggists, chiropractors, midwives, drugless healers and others. The neighborhood drug stores which dispense medication promiscuously constitute a public menace of the first degree. Their treatment usually consists of some kind of patent medicine having a mercurial base. This topical treatment gives a false sense of security, because once the lesion is healed the patient forgets all about it and gives no second thought to his grave condition. Years later, when the patient consults a physician for some other ailment the residual earmarks of the venereal disease may be discovered, but by this time irrevocable harm has been done.

The seriousness of the situation may be judged from the recent survey of syphilis in Chicago, made by the United States Public Health Service, the Illinois State Health Department and the Chicago Board of Health.[1] This report shows that 16% of infected individuals with primary lesions of syphilis consulted a physician, whereas 84%, an overwhelming majority, appeared for treatment only in the latent and late stages of the disease.

According to the rules and regulations of the State Health Department not only must physicians report venereal diseases, but, to quote, "the drugless healer, nurse, attendant, druggist, pharmacist, laboratory worker, dentist, superintendent

of hospitals, etc." It is probable that very few people know that the Health Law includes so many different groups who are responsible for reporting venereal diseases. The Health Department should rigidly enforce this regulation and publicize the fact that all these agencies are responsible for the reporting of venereal diseases.

Attempts at complete venereal disease control must also include the cooperation of other allied groups, particularly dentists, who see a number of primary and secondary lesions in the oral cavity. Though only a physician can make a definite diagnosis through clinical manifestations and laboratory tests, the other agencies can report their names to the Health Department as "suspects" and advise them to go to a physician or a clinic.

4. *Prophylactic Advice.* In case of suspected diphtheria, or rabies, we do not stop to deliberate very long, but act immediately to protect the exposed individual. Withholding such prophylactic measures would be considered a crime. We should take the same attitude in venereal diseases if we expect to eradicate them and prevent suffering and economic loss both to the individual and the public.

No one can deny the great value of prophylaxis in any program of communicable disease control, and particularly in venereal diseases. E. D. Barringer[2] and others are opposed to the giving of practical information on prophylaxis in venereal diseases because they fear an increase in promiscuous intercourse with all its consequences. However, others, like J. F. Mahoney,[3] surgeon of the U. S. P. H. S., are firmly convinced that prophylaxis should be made the pivot of venereal disease control. In his discussion on the evaluation of the various prophylactic procedures, Mahoney says, "The study of prophylaxis was originally prompted by the firm conviction that it will eventually play an important role in the control of syphilis."

Prophylactic means have proven to be of considerable value in the army and navy here and abroad. The latest reports on venereal disease among the Italian troops in Ethiopia disclosed the fact that prophylaxis was very effective.

In the army the individual is required to submit for treatment immediately after exposure or not more than eight hours later.

Attempts to apply the army method in civilian life have not been successful, first, because the local health authorities have no power to enforce rigid military supervision over civilians; second, because it would be too costly to maintain supervised prophylactic stations with day and night service; third, because the army procedure does not include provision for "female" prophylaxis which is of major importance in civilian life.

Although we do not, as yet, possess an efficient rapid method of prophylaxis in civil life, it is suggested that until a better system is evolved the modified army and navy method be utilized, as advocated by the cooperative groups on spyhilis headed by E. Moore.[4]

It is not sufficient merely to teach or demonstrate prophylaxis or just to dispense packets. Experience in the proper application of the various drugs and a knowledge of their use is of paramount importance. Nor is it wise to wait for the giving of instruction until one has been exposed to the disease. Every youth past the age of seventeen should be taught how to apply the various prophylactic measures, so that should he need them he will know how to use them.

The negro youth is in special need of such instruction because of the great prevalence of promiscuous intercourse among them. In a study made by Usilton, Hunter, etc.,[1] it was disclosed that syphilis is eight and one-half times as prevalent among the negro population as among the white. Therefore, this program should begin with the negro youth, through the N. Y. A., and other negro youth clubs.

The following is a suggestion for practical prophylaxis: prior to the teaching of prophylaxis it is advisable to give a simple explanation on the anatomy and physiology of the sex organs, stressing their significance in human reproduction and the necessity for keeping them free from venereal diseases. The dangers of promiscuous intercourse should be pointed out with emphasis on the avoidance of promiscuity as the safest course.

The next step should be instruction in the use of the drugs as soon as possible after exposure. Each person should be put through a regular drill just as if he had been exposed. Each one going through the drill should possess his own packet. No harm will result from the use of the drugs if everything is sterile. The drill should be supervised by a trained person, a physician, nurse or experienced orderly. The number of drills

necessary will depend upon the skill and intelligence of the participant. Some have been known to master the method in three drills. All participants should be cautioned against application of the drugs while under the influence of liquor. Instruction can be given by the physician to a single patient or presented before a group at a clinic or dispensary, but the practical drill should be done individually and in privacy.

Every general practitioner, whether in the small town or the big city, should be prepared to give instructions both on sex hygiene and on the practical prophylactic drills.

When prophylaxis is practiced intelligently among our youth it will considerably reduce the morbidity from venereal diseases.

SUMMARY

1. Specific information conveyed to the public concerning venereal disease control should aim at:

(a) Dispelling ignorance and timidity, and

(b) Acquainting the public with the significance of the methods used by the health authorities for the control of venereal diseases, for the protection of the patient and the public.

2. Tactful methods employed by physician and investigators help considerably in eliciting the patient's cooperation for disclosing contacts and sources of infection. To gain the confidence of the patient it is necessary to:

(a) Correct his attitude toward venereal diseases.

(b) Assure him that no harm will come to his contacts or suspected sources of infection.

(c) Inform him that all information will be kept confidential.

3. The creation of an interurban and interstate system of tracing sources of infection and contacts will facilitate the control of venereal diseases.

4. Druggists, pharmacists and dentists should be solicited and informed of the state regulations relative to reporting cases that come to their attention.

5. Teaching of practical prophylaxis should be preceded by a brief course of instruction in the anatomy and physiology of the sex organs and their significance for healthy progeny. The course of drills to follow should be given with the actual drugs as if the participant had been exposed. A practical knowledge of using prophylactic drugs properly will help to lower the morbidity considerably.

6. Every general practitioner should be prepared to give and teach the correct application of prophylaxis.

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AMAUROTIC FAMILY IDIOCY (JUVENILE FORM)

With a Report of Two Cases Occuring in the Same Family.

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and
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Two additional cases of amaurotic family idiocy (juvenile form) are to be presented, with the associated postmortem findings in one case. Etiology, symptomatology and pathology are to be discussed.

Amaurotic family idiocy (juvenile form), also known as aplasia axialis extracorticalis congenita, and Voft-Spielmeyer form of amaurotic family idiocy, is a constitutional, congenital and familial disease, characterized anatomically by degeneration of the ganglion cells of the retina and their processes which form the optic nerve, and by an abiotrophy of the entire central nervous system; and, clinically, it is manifested by an impairment of vision eventually ending in blindness and arrest of mental development, gradually passing into dementia, and by progressive enfeeblement.

This condition is a well-defined pathological and clinical entity, differing from the infantile form of amaurotic family idiocy (Tay-Sachs disease) in several respects, viz: it is not confined to the Hebrew race, its onset is delayed until the sixth or eighth year of life, and, retinal changes are unlike those found in Tay-Sachs disease.

The disease is found amongst races throughout the world. Salki and Maeda[1] report a case occurring in a Japanese child. Buchanan,[2] in a

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personal observation, finds it more common in the peoples who come from the Baltic region.

SYMPTOMATOLOGY

The onset is insidious, occuring at the age of five to eight years. More than one child is usually affected in most families and, oftentimes, those of the same sex. There appears to be a marked uniformity in the clinical picture of these cases. The child is usually born of healthy parents and is healthy himself. Disturbances in vision are generally the first symptoms. The ophthalmoscopic findings are quite specific—the retinal arteries appear narrow, and the optic disc assumes a yellowish-gray color. At first retinal pigmentation is absent. Later, the atrophy extends into the periphery of the retina, producing a streaky white appearance associated with deposits of fine granules of pigment. The visual disturbances run a fairly rapid course, leading to reduction of vision to mere light perception, and to total blindness within one to three years. At first the pupils react normally to light, but with the development of amaurosis fixation of the pupils occurs; oftentimes, in the later stages, a posterior cortical cataract develops. About two years after the onset the patient experiences his first series of convulsive seizures, simulating grand mal attacks of epilepsy. These "spells" recur at variable intervals and are of variable severity, persisting throughout the remainder of his life. Psychic disturbances present themselves at this time. The patient becomes irritable, sensitive, "high-strung" and emotionally unstable. Speech becomes stammering, and is associated with defective articulation and a tendency toward repetition of words or syllables.

The arrest of mental development gradually passes into dementia. The patient's memory, as well as his judgment, is impaired. He cannot remember anything that was taught him. His powers of concentration are lost. He becomes more irritable, and more emotionally unstable, crying or laughing impulsively. His speech becomes monotonous, his vocabulary reduced to a few words, and his articulation becomes more defective. At this time associated extra-pyramidal symptoms develop which have been unusually well described by Sjovall and Ericsson,[3] to-wit: "There is a progressive tendency to a rigid carriage of the body and a motorial, crouching position, a reduction or loss of the normal associated movements, a deficiency in and a slowness of bodily movements, a disturbance in gait; hypertonia of a predominant rigid type. In the later stages there occurs a disturbance of balance suggestive of cerebellar ataxia which should indicate an effect of the cerebellum. The final stage is marked by extreme mental degeneration; the patient lies in a state of apathy and is incapable of performing the simplest act; is extremely marantic; and an extremely prostrate position of the body, advanced hypotonia, and an oily countenance continually indicate the characteristic presence of neurological symptoms."

G. B. Hassin[4] speaks of such condition as decerebrate rigidity and states that it occurs in amaurotic family idiocy more frequently than in any other organic brain lesion, and should therefore suggest this morbid condition in obscure cerebral lesions.

The final stage of the disease is marked by a state of apathy with marked muscular wasting. Contractures may develop. Tendon reflexes may be hyperactive; Babinski's sign is usually present. Athetoid movements of the hands and feet may occur. The patient is completely invalidated and demented.

ETIOLOGY

The etiology and pathogenesis of this disease is not definitely known. A controversy exists as to whether the main etiological factor is a primary disorder of lipoid metabolism or a neuronal degenerative process.

Sachs[5] describes the disease as a state of "arrested cerebral development" with an associated anlage. He believe that the afflicted children are born with a central nervous system so inadequate to meet the demands that the cells, after performing their function for a few years, undergo complete degeneration.

The geneticists, likewise, believe that the disease is determined by a single recessive gene substitution.

Conversely, Kingdom and Hirsch[6] state that the mechanism of development of amaurotic family idiocy is not genetic but that the disease is acquired; degenerative changes developing as a consequence of some toxic agent.

There still exists a difference of opinion as to whether the condition is a mesodermic disease or an ectodermic disease.

As does Bielchowsky,[7] we believe that the con-

dition is a mesodermic disease, which, as a metabolic disorder, affects the reticulo-endothelial system.

Other investigators beside Bielchowsky (Speilmayer, Kufs, Sachs, et al.) have concluded that amaurotic family idiocy is nothing more than a partial manifestation of a generalized lipoid histiocytosis, such as Niemann-Picks disease (a mesodermic disease, affecting the reticulo-endothelial system). On the other hand, Schaffer[8] insists that amaurotic family idiocy and generalized lipoid histiocytosis are not produced by the same factor. He maintains that amaurotic family idiocy is an endogenous entodermal disease with a weakness of this particular layer, while Niemann-Picks disease is an endogenous mesodermal disease.

The pathology is limited to the central nervous system, yet no part of the central nervous system ultimately escapes, so that the cerebrum, the cerebellum, the spinal cord, and even the spinal ganglia are affected. The ganglion cells of the retina and their processes which form the optic nerve are degenerated as a part of the general involvement of the central nervous system. The result is a progressive atrophy of the optic disc and amaurosis—a pathognomy of this disease.

Greenfield and Holmes[9] state that the retinal lesions found in the juvenile form are of the same nature as that of the infantile form, and that the difference in the ophthalmoscopic picture is due to the fact that the degenerative process is confined to the ganglion cells of the retina of the infantile form, while in the juvenile form the rods and cones are involved, as well as the ganglion cells.

Richter and Parmalee[10] say the histologic changes in the juvenile form are essentially the same as in the infantile form except that the alterations in the central nervous system are, on the whole, less profound and are greater in some localities than in others, the intracellular deposits stain with scarlet-red, and there is no huge swelling of the dendrites. These same authors claim that there is a marked involvement of the white matter of the brain and cord in amaurotic family idiocy, as a result of an excessive production of neuroglia which interferes with the production and maintenance of myelin. However, this observation is not in accord either with the postmortem findings in our case or with those of other observers.

DIAGNOSIS

The diagnosis of this condition rests upon the history of other similar cases occurring in the same family, with a gradual onset between the ages of five and eight years, the ophthalmoscopic signs, the convulsions and the progressive mental and muscular enfeeblement followed by dementia.

The disease is invariably fatal, death usually resulting from status epilepticus or from some intercurrent infection.

CASE REPORTS

Family History (same for both cases). Father is an American, in good health, does not use drugs or alcohol. Mother is an American, in good health, had no miscarriages, does not use drugs or alcohol; has delusions, especially at night. There is no history of epilepsy, insanity, feeblemindedness, alcoholism, or cancer in the family.

CASE 1

The patient (S. H. Jr.) was admitted to the Dixon State Hospital from the Cook County Court on August 15, 1930; committed feebleminded. Personal history revealed that the patient was normal during infancy and childhood. He began school at the age of five. At the age of seven years his eyesight began to fail. He attended Jacksonvile School for the Blind from 1928 to 1930 where he was taught to read Braille. He was studied clinically at the Northwestern University Medical Clinic by a senior member of their staff. At some time during the course of the disease Schilder's disease was diagnosed, but detailed clinical data were not available. (This diagnosis remained attached to the child's condition until his demise. It was the postmortem findings which definitely established the true diagnosis). At the age of ten years the patient began to deteriorate mentally, at which time he was committed to this institution. The psychometric examination at the time of his admission gave the following summary of findings:

"Patient is blind; there is nystagmus present. He slurs his words, is quite talkative, can read Braille a little, can write a little. Chronological age, ten years eight months; mental age, eight years six months; I. Q., .80, which in the opinion of the examiner is too high." (Date of examination 9-3-30).

At this time his physical condition was reported as being good.

A second psychometric examination was given on December 14, 1931, the summary of which was as follows:

"Patient seemed willing to cooperate, but his speech was difficult to understand, being rapid, jumbled, slurred and incoherent. Patient seems psychotic. Comprehension, as well as orientation was poor. Validity of rating is doubtful. Chronological age, eleven years

eleven months; mental age, six years six months; I. Q., .55 (?)."

The patient was deteriorating to the grade of an idiot.

A summary of the progress notes of the patient shows that he had developed delusions of persecution and lost his habits of tidiness within nine months after his admission to the institution. At the end of the first year mental deterioration was noticeable. By the second year his speech became unintelligible, he cried continuously, lost the ability to feed himself and developed paranoid ideas. After the third year he seemed to have lost the power of speech, had a short steppage gait, and could walk only with assistance. He appeared to have lost his sense of equilibrium completely. The fourth year found the patient entirely unable to walk. Both legs were very spastic. When held in an erect position, supported by a person on either side, he would slide across the floor as if he were on ice (decerebrate rigidity). During this same year the patient had his first convulsive seizure, (since this convulsion the patient had nineteen more seizures before his expiration). He showed a gradual physical deterioration, losing weight and becoming very weak. He had even lost control of his sphincters. On October 2, 1935, he expired, in a demented and marasmic condition.

At autopsy no diseased condition was found except in the brain. The dura was adherent, as seen on sagittal section. There was evidence of an old scar in the sagittal line over the occipitoparietal region. The brain was very friable. A whitish, gelatinous, semipurulent substance covered the brain. The weight of the brain was 990 grams. Scars were present along the mid-line of the upper part of the cerebellum.

The brain was sent to the Research and Educational Hospital, Chicago, where a pathologic study of this organ was made by R. P. Mackay, neurohistologist, who found it to be normal in its gross appearance though greatly distorted. The meninges, basilar vessels and convolutions were normal, and no abnormality was observed upon section.

Microscopic appearance showed the chief pathological changes to be restricted to the ganglion cells, which showed severe damage in the cortex, basal ganglia, the nuclei of the brain stem, the cerebellar nuclei and the anterior horn cells. There was a swelling and ballooning-out of the cytoplasm which had a foam-like appearance. The nuclei of the cytoplasm were displaced to the periphery of the cells. Scarlet-red stains indicated the presence of fat droplets in many cells. Intracellular fibrillae were destroyed. There was no compensatory glia reaction.

The pathologist's diagnosis was "amaurotic family idiocy, juvenile type."

CASE 2

D. H., male born April 25, 1928, third in order of birth; full term; labor normal. No peculiarities noticed at birth. General health during infancy and childhood was good except for nervousness. He entered school at the age of six years but stopped in the first grade; his progress was slow but his behavior and interest were good. When first examined at the Children's Memorial Hospital in Chicago, on December 31, 1935, his symptoms were loss of vision of one year's duration, and loss of weight, with no behavior difficulties. Examination of the eye-grounds revealed a mild degree of optic atrophy, narrowed retinal vessels, and an absence of normal pigmented areas. It was the neurologist's impression that the child's condition was due to spastic quadriplegia with primary optic atrophy. A diagnosis of amaurotic family idiocy, juvenile type, was made.

The patient was admitted to the Dixon State Hospital on September 10, 1937, at the age of nine years four months. A special questionnaire was sent to the parents who furnished us with the following information:

The first symptom was defective vision. Ordinary glasses and corrective measures were tried but the results were unsuccessful. He was irritable, sensitive and emotionaly unstable. His speech was halting, monotonous, not stammering. He would repeat words and syllables. His vocabulary became confined to a few words. He seemed to be losing his memory and his judgment was impaired. His posture continued to be good except for a stoop characteristic of one not able to see well. Due to his lack of vision assistance in walking was necessary, his steps being short, and his movements gradually becoming slower. There has been no noticeable wasting of his muscles. His vision at this time proved to be just about good enough for him to walk in a good light. He could still distinguish large pictures and bold landmarks. From all appearances the physical eye appeared to be all right. At various times he would become moody and dreamy, or irritated and upset. His appetite was good but his attention had to be focused upon eating. He has apparently been incapable of absorbing anything new, but enjoyed having been read to for short periods even though he could not always focus his attention on the reading.

Physical examination of this child on admission revealed him to be in a good nutritional state. Hearing was normal but vision was impaired. His pupils were regular, centric, equal; reacted to light. Nose, mouth, pharynx and neck were essentially negative. Chest, heart, abdomen and extremities were essentially negative. The reflexes were all present and normal. There was no ankle clous; Babinski sign was not present. Knee jerks were markedly exaggerated. There was no Rhomberg. Coordination tests were good. The blood Wassermann and Kahn tests were negative.

An ophthalmoscopic examination, performed on October 28, 1937, revealed a bilateral optic atrophy with the left retina destroyed. There were no cataracts to be seen. Another ophthalmoscopic examination, performed on December 13, 1937, showed a slight progression of all morbidity present.

The psychologist's report, submitted shortly after the patient's admission (9-23-37), stated that "momentarily the patient appeared moody with instances of faulty

concentration." The Hayes-Binet Test revealed an I. Q. of .87; diagnosis slightly below average.

Within three months following the patient's admission to this institution his vision had become more impaired. At the present time he can differentiate only between light and dark. He can still see moving objects but cannot recognize or distinguish them.

A second psychometric examination was made on December 28, 1937 (three months after the first psychometric examination), the psychologist reporting:—"The patient accepted the test situation as a matter of course. He lacked the ability to concentrate for any length of time, and it seemed to confuse him to have questions repeated. He says that he can see light but he is unable to distinguish objects. The Hayes-Binet Test for the blind had to be given him. His performance on the tests is inconsistent. Memory, reasoning and comprehension tests are passed at a lower level than at the time of the previous examination." The I. Q. at this time was .72, and the diagnosis as a borderline defective was given.

It is worthy to note that other siblings living are two sisters and one brother. One sister (second in order of birth) is a high school honor student. The other sister (fourth in order of birth) is seven years old, and is in the second grade. The brother, who is four years old, is said to be bright for his age. All siblings are in good physical condition.

The question which arises, but must be left unanswered, is: "Is the four-year-old male sibling destined to follow in the fatal footsteps of his brother?"

N. B.—On October 19, 1938, the father was interviewed relative to the condition of their youngest child, a male, now 5 years of age, who reported the boy was examined recently at the Billings Memorial Hospital Clinic, Chicago, and the results of the examination showed indications of a similar condition developing in this boy's fundi. If true, he is destined to suffer the same fate as that of his two brothers.

CONCLUSION

1. Two cases of amaurotic family idiocy (juvenile form) are reported with a striking uniformity between the cases, as regards morphology, symptomatology and the course of the disease.

2. Examination of the fundi should be made in every case of arrested mental development associated with muscular weakness to avoid the possibility of an oversight of a case of amaurotic family idiocy (juvenile form).

Dixon State Hospital.

SCHILDER'S DISEASE

Similar to Amaurotic Idiocy except—

1. Onset is acute.
2. Is not a family affection.
3. Comes on at various ages.
4. Shows no typical changes in the fundus.

Clinical Symptoms Common to Both Diseases—

1. Rapidly developing blindness.
2. Mental deterioration.
3. Spasticity.
4. Hyperacusis.

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The authors wish to express their appreciation to Dr. W. A. McNichols for his performance of ophthalmoscopic examinations of the patient described in Case Report No. 2.

DISCUSSION

Roland P. Mackay (Chicago): Amaurotic family idiocy is an exceedingly interesting disease and is probably not as rare as one might think. Certainly, in view of the difficulty of clinical diagnosis, a considerable number of the patients in such institutions as Dixon might be found upon pathological examination to have this disease.

From an etiological standpoint the disease is very puzzling. At first thought to be highly specific it has later been found to have a close relationship to three other diseases. Niemann-Pick's disease is characterized by splenohepatomegaly, and the accumulation of free lipoid substances particularly in the cells of the reticuloendothelial system. In some cases of Niemann-Pick's disease the neuropathological findings are almost identical with those in amaurotic family idiocy.

Gaucher's disease, a form of splenomegaly, is also similar, and a third condition is Schueller-Christian's disease, which is characterized by similar degenerative changes with the accumulation of cholestrol in the cells of the reticuloendothelial system and in the bones of the skull and other parts of the body.

About the only characteristic difference between these four diseases is that the lipoid substances that accumulate in the cells are not the same. We do not know what they are in amaurotic family idiocy, except they are neither neutral fat nor normal cytoplasm. They stand characteristically somewhere in between. In Niemann-Pick's disease the chemical substances present are phospholipins. In Gaucher's they are supposed to be cerebrosides and in Scheller-Christian's disease they are cholesterol.

These chemical characteristics suggest that amaurotic family idiocy is a degenerative disease due either to faulty metabolism or perhaps to toxins. It may be due partly to both. There may be an hereditary meta-

bolic disturbance in which toxins are developed in the organism having this peculiar effect on the cells of the nervous system.

From a pathologic standpoint the only thing to be emphasized beyond what Dr. FitzJerrell said is that these changes are exceedingly widespread and are not restricted to any particular system. They are, of course, found only in ganglion cells and not in the white matter.

Dr. FitzJerrell pointed out the clinical resemblance between amaurotic family idiocy and Schilder's disease. Pathologically they are quite different in that the changes in Schilder's are almost entirely restricted to the white matter while those in amaurotic family idiocy occur only in the gray matter.

Therapeutically we encounter great difficulty in this disease, and we can probably never achieve much until we know more about the intimate nature of the chemical disturbance. That will necessitate not only pathological studies such as those carried out in this case but clinical studies of a metabolic sort during life. That, in turn, is going to necessitate earlier diagnosis and I can close in no better way than by seconding Dr. FitzJerrell's plea for more careful ophthalmologic examinations, particularly in Dixon and similar institutions where such examinations can be easily carried out. It would be very advisable also to have close cooperation between the internists who see the Niemann-Pick's, Gaucher's and Schueller-Christians' diseases, in order to correlate the clinical findings in this large group of cases.

I wish to express my appreciation to Dr. FitzJerrell and Dr. Neuchiller for their very interesting presentation.

Dr. Neuchiller (closing the discussion): At the present time the boy's eyesight is practically gone, as our motion pictures would have shown. The boy can stare into the sunlight without even blinking his eyes. He is walking with more of a shuffling gait now, and although he feeds himself, one can see he is gradually losing his power, both of coordination and of cerebration. No doubt he will follow in the fatal footsteps of his brother.

At this time, I wish to take the opportunity to thank Dr. Mackay, in behalf of Dr. FitzJerrell and myself, for his instructive and illuminative discussion of the paper.

MULTIPLYING SAFETY

When your speedometer goes to 50, think of 55 feet. That is how far the car will travel after you decide to stop, before your foot can touch the brake pedal. When the speedometer says 40, think of 44 feet; if 30, 33 feet, and so on. Experts call this the "reaction distance."

To find out how much you need to stop safely at 40 or 50 miles an hour, multiply the "reaction distance" by three. At 50 miles an hour, you would multiply 55 by three, and you know that a distance of 165 feet would be necessary to stop the car.—Barney Oldfield, in *Chicago Journal of Commerce.*

STAB WOUNDS OF THE CERVICAL SPINAL CORD

KARL L. VEHE, M. D., AND ROBERT E. LYONS, M. D.

CHICAGO

Laceration of the spinal cord due to knife wound is rare. The case which is the basis of this report is of interest for this reason and further because of its sixth cervical hemisection, and most important a transitory localized meningeal infection.

Relative to the special points of interest, there are few reports of cord stab wounds. The paucity is due to the protected position of the cord, the vertebral arrangement resisting penetration.

The cervical level (sixth) added to the gravity of the outlook. In third and fourth cervical segment involvement death usually occurs rapidly due to respiratory failure. The higher the lesion in the cervical cord the higher the mortality. Rand and Patterson found the mortality in lacerations of the first and second segments 71 per cent, fourth segment 53 per cent, and fifth, sixth, and seventh cervical segments only 23 per cent.

In cervical lesions a Horner's syndrome is frequently encountered on the same side. This was present in the case under discussion.

Hemisection as evidenced by the Brown-Sequard syndrome is not an unusual result of gun shot wounds. This patient, after the passage of spinal shock, showed an upper motor neuron lesion and dorsal column tract injury on the side of the cord wound and a loss of pain and temperature sensibility on the opposite side. His sensory loss was from two to four dermatomes below the motor loss.

Posterior column damage is manifested by loss of position sense, astereodiagnosis, loss of vibratory sensation, tactile discrimination, and deep joint and tendon sense. Dorsal spinocerebellar tract damage producing ataxia is masked by corticospinal tract injury.

Though the patient burned his left hand repeatedly with cigarets because of the loss of pain and temperature sense, the light touch senation was not wholly lost because of the triple course followed by the latter's fibres. From a given area some fibres ascend on the same side in the

From J. Buchbinder, M. D., Surgical Service, Cook County Hospital.

ventral spino-thalamic tract, others cross immediately, and still others ascend in the posterior columns.

The infection which occurred was alarming but fortunately of short duration. It was unusual, however, in that it manifested itself suddenly on the ninth day and disappeared in three days.

Spinal fistula may occur in spinal canal wounds and frequently precedes meningitis which may be localized, abscess, or generalized. Foreign bodies in the depth of the wound definitely predispose to the development of infection. Fragments of bone, foreign bodies, spinal fistula and spinal block furnish the indications for operation. Fistulas should be closed early while still free from infection.

The immediate effect of laceration of the spinal cord regardless of the cause may be spinal shock. This varies from a slight to a profound degree depending upon the extent of the trauma. The symptoms are those of ordinary shock with, possibly, superimposed nausea, vomiting, tremors, flaccid paralyses and anesthetic areas. During this stage conclusions as to the extent of the cord injury are impossible because many of the localizing symptoms, motor and sensory, may clear rapidly as the shock leaves. Likewise hemorrhage and edema may produce temporary and widespread signs. As might be expected, clean-cut knife wounds show very little shock as in the present instance.

In the majority of cases reflexes reappear within two weeks, and if the paralysis is to be permanent the previously flaccid muscles become spastic with all the manifestations of an upper motor neuron lesion.

Bladder and bowel control are always interfered with to some degree in cord injuries of whatever level, and in cervical lesions priapism is a frequent symptom.

In general the prognosis for life in knife wounds is good. Coleman and Cobb maintain that those who pass the first week largely recover. Death in the first week is due to respiratory failure, spinal shock and pneumonia.

In the light of the above comments the following case history is presented for the record. J. B., a 28-year old white male was stabbed on the left side of the neck on November 13, 1936. He was stabbed so hard that the blow knocked him to the ground and rendered him unconscious for ten minutes. He was brought to Cook County Hospital within two hours of the accident complaining of numbness "all over" and burning pains over the right leg and arm. Examination at that time revealed a well developed white male not acutely ill with a temperature of 98.4 F. a pulse of 100 and a blood pressure of 116 over 80.

Wound: Consisted of a 5 cm. laceration starting 2.5 cm. inferiorly and 2.5 cm. posteriorly from the left mastoid process and running obliquely downward and medialward toward the 5th cervical vertebra, to within 3 cm. of the midline. Four black silk sutures were used to approximate the skin edges.

Motion: Flexion of the forearm, extension of the wrist, radial flexion of the wrist and supination of the forearm on the right side were much diminished. Extension of the forearm, flexion of the wrist, pronation of the forearm and ulnar deviation of the right hand were lost. All the motor power of the right hand was lost. All movements of the right lower extremity were absent, but involuntary flexor movements of the right thigh were occasionally seen.

Reflexes: Reflexes on the left side were diminished. On the right the biceps and pectoral jerk were the same in amplitude as on the left. The radioperiosteal and triceps jerk were markedly diminished. Normal reflexes of the right lower extremity, right abdominal and right cremasteric reflexes were absent.

Sensation: The patient complained of a severe burning pain over the right side of the body when touched with a piece of cotton. There was numbness of the right hand and leg. Touch sensation was universally unaffected. On the left side of the body pain and temperature sensation was lost from the level of the 8th cervical dermatome downward.

Vibration of a tuning fork was not appreciated on either side below the level of the 6th cervical dermatome. There was loss of position sense of the left and right upper and lower extremity. Dysdiadochocinesia and astereodiagnosis were evident in the left hand.

Pupils: The right pupil was miotic and there was a ptosis of the upper lid. The pupil reacted to light and accommodation as did the left.

Urinary and fecal difficulties: At the time of admission the patient suffered with urinary incontinence. Bladder sensation was absent but he had periodic spontaneous evacuation of the bladder without sensation. The first few days of hospital stay he had no bowel movement nor rectal sensation.

Spinal puncture: At the time of admission revealed a grossly bloody fluid. Wassermann was negative and x-ray of the cervical spine revealed nothing abnormal.

At this time a diagnosis of laceration of the right half of the cervical spinal cord at the 6th cervical dermatome was made.

For nine days after the accident nothing unusual was noted. There had been no leakage of spinal fluid. On the tenth day he complained of headache, stiffness of the neck and pain in the back and the temperature rose to 103 degrees. There was a positive Brudzinski and Kernig sign with a stiff neck. Spinal puncture revealed a grossly purulent fluid with a leukocyte count of 3,200. Smear and culture revealed pure staphylococcus albus. With the onset of this menin-

gitis it was noted that there was a drainage of fluid from the neck wound. As it was profuse and continuous repeated spinal taps were not done. In three days all meningeal symptoms were gone. The neck wound continued to discharge spinal fluid for two more days. Spinal puncture six days after the onset revealed a crystal clear fluid with 15 cells per cubic millimeter.

Three weeks after the accident a slight flexor movement of the right thigh was possible but spontaneous movements were also present. Exaggerated reflexes of the right lower extremity were present and ankle clonus made its appearance. There was no change in sensation. At this time the patient had severe sweats but the right side of the face remained dry. Urinary and fecal difficulties had disappeared and both bladder and rectal sensation were present.

From this time on recovery was rapid. The Horner's syndrome disappeared in four weeks and a Hoffman sign of the right side was present in five weeks. He developed a spasticity of the right lower extremity with all pathological reflexes present. Wheel chair existence was possible after the third week.

Three months after admission the patient was discharged from the hospital to a convalescent home. At that time he was walking on crutches with difficulty and was still unable to perform intricate movements with his right hand. Sensation remained the same as on admission.

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In the past 25 years, cancer has advanced from seventh to second place among causes of death.

It is estimated that hookworm affects 5,000,000 out of the 12,000,000 people in rural districts in Egypt.

THE CONSIDERATION OF SOME PRACTICAL POINTS IN THE MANAGEMENT OF INFLAMMATORY DISEASES OF THE UVEAL TRACT

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The inflammatory diseases of the uveal tract and cornea probably constitute the majority of eye conditions the oculist is called upon to treat. Their management is difficult partly because of the necessity of depending upon the opinions of consultants in other branches of medicine for the elucidation and treatment of systemic diseases to which those of the eye may be secondary. Certainly a thorough physical examination is indicated in the presence of numerous eye diseases and in this particular group the investigation is directed along very definite lines.

The patient with his first attack of iritis, keratitis, choroiditis, or uveitis comes to the oculist with the expectation of receiving treatment from that source. As you well know, the local treatments which the oculist may administer are important but relatively few and the patient should immediately have the benefit of examination by our confreres in other branches of medicine. The first step in this direction is the education of the patient to the necessity of this procedure. This often times is a difficult task and if not properly placed before the patient may result in a delay which will render the subsequent treatment more difficult and the ultimate result less satisfactory. How often a patient for whom a general examination is advised has the idea that this consists of a stethoscopic examination of heart and lungs, blood pressure readings, a urinalysis and perhaps a blood count, and occasionally this view is encountered within the profession. Adequate investigation in these cases involves the services of an internist, an otorhinolaryngologist, a urologist, a dental surgeon, frequently a syphilologist, and in addition certain roentgenologic and laboratory studies. The oculist must be the generalissimo in this attack. With the numerous consultants required he must be sure that each is cognizant of the local as well as the general aspects of this complex

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problem. To be sure that this situation exists the oculist himself must be sufficiently well informed in the details of the various examinations and treatments to assure himself that his patient is receiving the proper attention, for should the expected improvement not occur the oculist will be held responsible, and rightly so if the patient has followed the advice given him. For this reason we feel that a résumé of some of the more important diagnostic and therapeutic measures is worthy of consideration.

In the majority of inflammatory diseases of the uveal tract, and to a lesser extent those of the cornea, the causative factor will be either syphilis, tuberculosis, or a focus (or foci) of infection. In certain instances the clinical appearance of the disease may be definitely that, or at least strongly suggestive of one of these factors. Probably in the majority this will not be so and the determination of the etiologic agents will depend on the findings of the consultants. Where indicated local treatment should, of course, be instituted at once by the oculist. In cases of anterior segment disease use of various mydriatics, perhaps in conjunction with dionin, and local application of heat are the standard procedures. Except in isolated instances the oculist has little to offer for therapeusis other than these measures and where the disease is limited to the posterior segment it is probable that local treatment of any kind is unnecessary.

The patient should be placed in the hands of an internist familiar with the diagnostic procedures necessary to elicit the factors which are of prime importance to the oculist. The presence or absence of syphilis is not decided solely on the status of Kahn or Wassermann reactions of the blood. There are occasional cases of active syphilitic disease of the eye in which the Wassermann test is negative. These patients give a history of lues and respond to antiluetic treatment. Usually they have had either no or inadequate antiluetic treatment. The possibility of hereditary syphilis must also be considered, for although most such cases will show other stigmata there are a few in which the ocular disease may be the only visible manifestation. If a diagnosis of syphilis is made the treatment should be administered by a physician qualified by training and experience in syphilis therapy. The treatment of syphilis by the oculist is mentioned only to be deprecated. Syphilologists generally are of the opinion that complications occur more frequently with inadequate treatment than with no treatment. In my experience I believe that most patients presenting themselves with ocular syphilis have given a history of but one or two series of treatments with arsenicals. The necessity of treatment will, of course, persist long after the ocular lesion has subsided and is essentially the problem of the syphilologist. The oculist may lend valuable aid by his support of the program of continued treatment.

The relationship of tuberculosis to diseases of the uveal tract is decidedly a moot question. It is usually impossible to prove that in a suspected case of uveal tuberculosis the condition is actually due to the tubercle bacillus. For this reason the diagnosis of uveal tuberculosis depends principally upon the following factors: 1, the appearance of the lesion; 2, its clinical course; 3, the tuberculin reaction, and 4, the absence of other possible etiologic factors. Because of the uncertainty of diagnosis the statistics of the relative frequency of uveal tuberculosis vary widely. Statistics from European countries, especially Germany, report as high as 50% of the iritis cases being tuberculous in origin while in our own country 5% is a more commonly seen proportion. The discrepancy in these figures is due first to the fact that not all tuberculous eye diseases present a pathognomic clinical picture, and second that in this country other focal infections have been given more attention than tuberculosis as probable causes of lesions of the uveal tract.

Tuberculosis may involve the eye in one of two ways. First, by the formation of tubercles essentially similar to those formed in any other part of the body, or second, by an allergic response of the eye to tuberculoprotein. The first type of uveal tuberculosis, characterized by the formation of tubercles, is of less frequent occurrence than the second type. The tuberculous eye lesions which can be diagnosed with the greatest degree of certainty are miliary tubercles in the choroid. They are definitely nodular in character and are usually seen in children with tuberculous meningitis. A fatal termination as a result of the systemic disease usually precludes the necessity of treatment of the ocular disease.

The conception of allergic tuberculous lesions

of the eye is based upon clinical and experimental evidence. It has long been known that a normal and a tuberculous animal will react differently to an injection of tubercle bacilli. The response in the normal animal is a slowly developing tuberculosis with tubercle formation, while in the tuberculous animal an acute localized inflammatory lesion occurs perhaps with some destruction of bacteria and inhibition of dissemination. The acute inflammatory phase of the reaction has been shown to be due to a hypersensitivity to tuberculoprotein which has developed in the infected animal. The allergic type of ocular tuberculosis then is the response of a sensitized ocular tissue to tuberculoprotein liberated either from a focus in the eye or elsewhere in the body and reaching the eye by way of the blood stream. Since there is no practical way of determining the sensitivity of the eye we must depend upon a test of the cutaneous sensitivity. While it is not necessarily true that cutaneous and ocular sensitivity are parallel Woods has shown experimentally in animals that this situation usually exists. The relation of this type of ocular tuberculosis to active pulmonary tuberculosis is a question upon which there is considerable difference of opinion. In this country most authorities upon the subject believe that active lesions are seldom present but that a subclinical focus, demonstrable neither by physical signs nor x-ray, exists in the hilar glands. On the other hand certain European investigators report that as high as 60% of the chest roentgenograms reveal slight but definite evidence of active pulmonary disease. The crux of the situation would seem to lie in the interpretation of the roentgenograms. It is certain, at any rate, that frank pulmonary tuberculosis is a rarity among these cases.

The factors concerned in the diagnosis of uveal tuberculosis were enumerated previously. The first of these was the clinical appearance of the disease. There are varied affections of the eye which are thought to be manifestations of this type of tuberculosis but it is seldom justifiable to say that the clinical appearance of a lesion is more than suggestive of tuberculosis. There is, however, a clinical type of uveitis without tubercles which is commonly regarded as an allergic reaction to tuberculin. These cases present little or no ciliary congestion or pain, the iris is usually adherent to the anterior lens capsule which has many pigment deposits, the posterior surface of the cornea is densely studded with mutton fat deposits, and the vitreous is sufficiently cloudy to partially or completely obscure a view of the fundus.

The diagnosis of ocular tuberculosis is seldom made until syphilis and focal infections have been eliminated as possible causes. It is possible that foci of infection may be coexistent with ocular tuberculosis. Failure to respond to removal of foci is frequently regarded as evidence that the condition is tuberculous.

The next evidence to be considered is the state of cutaneous allergy of the individual to tuberculin. For this purpose the intracutaneous Mantoux test using the purefied protein derivative is preferred. It is desired to determine the patient's sensitivity quantitatively and for this reason the first test should be made with .001 mg. of tuberculin. In the event a negative reaction occurs the test is repeated with the amount of tuberculin increased ten fold until .1 mg. has been used or a positive reaction noted. Woods has reported, in a series of cases of clinical ocular tuberculosis, that 53% were sensitive to .001 mg., 41% to .01 mg., and the remaining 5% were either insensitive or required larger amounts. Only those reacting to .001 mg. were regarded as possessing an excessive cutaneous sensitivity as many normal persons will be found sensitive to the latter dosages.

Lessening the ocular sensitivity to tuberculoprotein is the end which we desire to attain. Reduction of the cutaneous sensitivity by gradually increasing doses of tuberculin is possible and would seem to be accompanied by a corresponding reduction in ocular sensitivity. The inital dose of tuberculin should not be more than .0001 mg.; succeeding injections are given every four days and each increased according to the technic described by Gifford. The length of treatment is subject to considerable variation. Some discontinue treatment with clinical improvement. Woods feels that treatment should continue after this period to maintain a reduced state of sensitivity and prevent a recurrence.

Treatment of ocular tuberculosis is, of course, not limited to tuberculin therapy. General hygienic measures, rest, heliotherapy, and adequate diet contribute to the development of immunity which is also a factor in the control of this disease. Paracentesis alone or associated with auto-

hemotherapy has many advocates. X-ray and radium therapy may be considered.

The possibility of infected tonsils, teeth, prostate, pelvic organs, sinuses, and other organs producing inflammatory lesions in various parts of the body has been widely accepted since its introduction by Billings and Rosenow. The eye, particularly the uveal tract and cornea, is one of the sites frequently so involved. It is conceivable that a primary focus elsewhere in the body might cause ocular inflammation by various means such as, 1. the direct transfer of organisms, or 2. toxins, or 3. an allergic reaction. Benedict, Rosenow and others believe that streptococci growing in abscessed teeth, tonsils, prostate, etc., may acquire a selective affinity for certain other tissues of the body of which the uveal tract is one. This view has been supported by animal experiments, and while this "elective localization" theory has not been accepted unanimously, it is safe to say that the consensus is that the secondary site of inflammation is the result of a transfer of organism from one tissue to the second. The possibility of this reaction in the second tissue being allergic in nature has been studied by Woods who feels that while it may be a factor in certain cases there is not sufficient evidence to warrant an assumption that it is a major factor.

There are many statistics as to the incidence of various sites of infection in relation to uveal inflammation. These statistics are of little importance since all possible foci must be searched for and frequently multiple infections are found. If the latter situation exists it is impossible to determine which is the most active. Sinusitis, we feel, is very rarely the cause of uveal inflammation if present conservative treatment is favored. The tonsil problem may be simple or difficult. If there is local evidence present or demonstrable that chronic infection exists tonsillectomy is in order. I think it is generally agreed that in some cases tonsils may be a focus of infection although there is nothing to suggest it upon examination of the throat. At times it will probably be advisable to remove tonsils which may appear relatively innocent.

Investigation of the mouth for foci of infection includes search for periapical or peridontal infection, pulpless teeth, residual roots, and pyorrhea. A full mouth x-ray is essential in all cases. The necessity of this last procedure is often difficult to impress upon patients whose dentist has recently, after inspection of the teeth, pronounced them satisfactory. It is even more difficult to convince a patient whose teeth have all been extracted that anything is to be gained by x-ray of the mouth. However, Gardner reports that in one-third of patients with full dentures x-ray studies reveal one or more retained roots. The same author states that it has been estimated that not half the dentists in the United States make adequate use of the roentgen ray. Teeth showing roentgenologic evidence of periapical and peridontal infection are to be removed and proper treatment of pyorrhea instituted. There is some difference of opinion in regard to pulpless teeth which show no roentgenologic evidence of apical granulomata. It has been our policy to request removal of teeth of this type as experimental and clinical evidence indicates that a large percentage of them are infected. We have seen no harmful results from the removal of infected teeth during the acute stages of uveal inflammation, although where a large number of teeth are to be removed consideration should be given to the toxic effect which sometimes occurs following extraction. With this thought in mind the extractions may be done in more than one sitting at the discretion of the dental surgeon, after he is cognizant of the circumstances.

We wish to emphasize especially the need for thorough consideration of the prostate in the male and the pelvic organs in the female in cases of uveal inflammation because it seems probable that infection in these locations is frequently searched for and treated with less diligence than infection elsewhere. We feel that the prostatic problem requires the consideration of a competent urologist both as to diagnosis and treatment. Iritis is very occasionally seen in a case of gonorrheal urethritis or prostatitis but the very large percentage of prostatic infections associated with uveal inflammation will be nonspecific in character. Wesson states that chronic prostatitis is as common as chronic tonsillitis. According to O'Conor the only reliable method of demonstrating prostatic infection is the microscopic examination of secretion obtained by massage. Severity of the infection may be graded roughly by the number of pus cells present in the smear. Urologists stress the point that a single negative smear does not necessarily mean

infection is absent and advise a reexamination after five to seven days. Nonspecific prostatitis is usually associated with other foci, Cumming and Chittenden stating that 98% of their cases have one or more definite foci. The first step in the treatment is the elimination of these other foci. Following this, occasional gentle massage may be instituted, with emphasis on the gentle and occasional. We have little fear that the removal of infected teeth or tonsils will cause a flare up of an ocular lesion but too frequent or energetic prostatic massage will very often do just that. The urologist may find it necessary to be more moderate in his treatment in the presence of ocular disease than he is in its absence.

Cervicitis, endometritis and salpingitis are the pelvic disorders more frequently encountered in association with the group of eye diseases under discussion. Scleritis and episcleritis are conditions not previously mentioned which seem to occur more frequently in conjunction with foci in the pelvis than elsewhere. Here, as in other foci, streptococci seem to be the predominant organism. Procedures necessary to eliminate these foci must be selected and carried out by the gynecologist. If the infection is limited to the cervic cautery, coning or amputation may be satisfactory. Not infrequently hysterectomy and salpingectomy are required to completely eliminate pelvic disease.

In the cases diagnosed as of luetic or tuberculous etiology systemic treatment will be instituted along lines previously discussed. In the large group of those due to focal infection it is frequently possible, following the removal of the foci, to aid recovery considerably by systemic treatment which is, in the main, empirical in nature. In our experience the most useful single method is foreign protein therapy, for which we usually prefer typhoid vaccine given intravenously at intervals of two to three days in doses sufficient to produce a rise in temperature up to 100° or 102°. Seldom more than six injections are given, for if a favorable response has not occurred in that time probably none will. Nonspecific foreign protein therapy has been used for many years in the belief that shock, rise in temperature, leucocytosis and a general stimulation of the "body defenses" provide a beneficial effect. Brown, feeling that the ocular inflammation may be due to a sensitization of the uveal tract by the circulating protein products of a remote focus, suggested that the increased antibody formation resulting from the foreign protein injection interfered with the uveal activating agent as it was brought to the eye or that they united with available receptor cells, thus rendering the activator inert. He found that aspiration of the anterior chamber was desirable as newly formed aqueous had a much higher antibody concentration.

The administration of large doses of salicylates is a time honored and widely accepted procedure. We do not employ foreign protein and salicylates contemporaneously. Neoarsephenamine has been recommended as a nonspecific remedy in acute and chronic uveitis of unknown or focal infections etiology. Since the introduction of prontylin and its derivatives these drugs have been administered in a wide variety of diseases. There seems to be some rationale in their use in eye lesions which are apparently due to focal infections essentially streptococcal in character. In the relatively small number of cases receiving it under our observation the results with this drug have been very disappointing.

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DISCUSSION

Dr. George Guibor, Chicago: Dr. Porter's paper stresses several valuable points in the diagnosis and treatment of uveitis. He believes that a general physical and laboratory examination is necessary in all cases to determine the etiology of the inflammation. These causes may be foci of infection, tuberculosis, syphilis or allergic phenomena. Some authorities mention allergy as a cause of uveitis, especially sympathetic uveitis, tuberculous uveitis, and uveitis following cataract extraction. Syphilitic uveitis, in many cases secondary to syphilitic interstitial keratitis, he believes is best treated by treatment of the syphilis. Some ophthalmologists, however, have treated this disease by thermogenesis alone, and believe that increasing temperature of the body from 105 degrees to 107 degrees for several hours produces a more rapid recession of acute symptoms than does antisyphilitic treatment alone.

Tuberculous uveitis, Dr. Porter believes, is of two types: the first with definite tubercles and a second with evidence of ocular sensibility to the tuberculoprotein. Active pulmonary tuberculosis in the latter type is rarely present, but some subclinical focus in the peribronchial glands may exist. The diagnosis and treatment of this affection is excellently outlined.

In the most common type of uveitis due to foci of infection, Dr. Porter emphasizes the removal of all pulpless teeth, whether periapical rarefaction is present in the x-ray films or not. Some consider this a radical procedure. He calls attention to a routine often overlooked—the roentgen-ray examination of the edentulous mouth. X-ray films may disclose one or more retained roots in one-third of the cases even though the teeth have been extracted for many years.

I am sorry that lack of time prevented Dr. Porter from discussing dietetic treatment, calcium gluconate, and the use of infra-red rays in the treatment of uveitis. I should have enjoyed hearing more about uveitis following cataract extraction and also sympathetic uveitis. I think that he has rendered us a valuable service in reviewing the important points about the treatment of inflammation of the uveal tract.

Dr. Thomas A. Starkey, Beardstown: I believe Dr. Porter is to be congratulated for the concise and complete manner in which he has presented his subject. When we consider the many conflicting theories and opinions regarding the etiology of inflammatory diseases of the uveal tract we must certainly realize that we need more practical guidance in handling these cases.

Dr. Porter's first point, the great need for perfect cooperation and understanding between the oculist and the other consultants, is well taken. In my experience such cases have usually been referred with the blunt request for a general examination, the oculist giving no hint of what his diagnostic suspicions may be. Even if he had no such suspicion a simple statement to that effect may be very helpful to the internist. Dr. Porter pointed out that the causative factor in most cases will be either syphilis, tuberculosis or a focal infection, rarely a gonorrheal urethritis. The internist should also bear in mind the possibility of diabetes and gout.

The presence of syphilis is probably the most easily proven, provided we are not deceived by negative serologic tests or the absence of obvious syphilitic stigmata. Careful examination of the cardiovascular and nervous systems, including spinal fluid examination, may be necessary.

Fortunately, the history as given by these patients is usually very reliable. With their vision at stake they are apt to be very honest. Tuberculosis as a causative factor certainly is a controversial question For the diagnostician, probably the most important point to keep in mind is that it is not the active, obvious tuberculosis that he is seeking, but rather the obscure, quiescent types. For the detection of these cases roentgenograms of the chest and the tuberculin tests are indispensable. With reference to tuberculin tests it is interesting to note that European writers attach greater significance to the focal reaction, or flare-up in the uveal inflammation on administration of tuberculin than they do to the systemic or local reaction at the site of injection. And yet, in spite of this apparently more exacting diagnostic criterion they report the incidence of uveal tuberculosis at nearly ten times what it is in this country. The difference must certainly be explained by a far greater incidence of general tuberculosis in European countries.

The search for foci of infection is probably one of the most common problems with which the diagnostician has to deal. Investigation of the teeth and tonsils always comes first, dental x-rays being an absolute necessity. Whether or not infection is discovered at one of these sites, the next step is a search for prostatic or pelvic inflammatory disease.

Dr. Porter's point that negative findings following one prostatic massage cannot be considered conclusive, is important; also, that when multiple foci are discovered, the prostatic or pelvic infection should be treated last and most cautiously. Both these principles are generally accepted by urologists.

Dr. G. LeRoy Porter, Urbana (closing): I wish to thank both Dr. Guibor and Dr. Starkey for their discussions. Dr. Guibor presented some very pertinent questions which I had omitted. Dr. Starkey's comments on focal reaction following tuberculin tests as practiced in Europe are interesting. In this country the feeling is that a focal reaction is distinctly undesirable. To avoid this possibility the so-called purefied protein derivative of tuberculin has been developed and is now generally used.

SULFANILAMIDE: ITS USE IN GENERAL PRACTICE

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Sulfanilamide has proved to be a most useful chemotherapeutic drug. Because of the successes reported in the early literature we started using it in April, 1937. Since that time we have used it in over 150 cases in hospital and private practice. These include erysipelas, scarlet fever, follicular tonsillitis, follicular pharyngitis, acute otitis, suppurative otitis media, two cases of appendicitis complicated with generalized peritonitis which were operated upon, infected wounds of the extremities with generalized lymphangitis and adenitis, cystitis, non-specific prostatitis, acute gonorrheal urethritis, gonorrheal prostatitis and gonorrheal epididymitis. Prophylatically it has been used in obstetrics where deep tears or surgical delivery has been necessary. The most spectacular of our cases was one of beta-hemolytic streptococcus meningitis complicating suppurative otitis media with recovery, which will be reported.

Except in the cases of meningitis, peritonitis and the gonorrheal infections the dosage has been far below the average recommended by many investigators. Adults were given from 15 to 25 grains daily; children, between the ages of seven and fourteen, 10 to 15 grains daily and younger children 5 to 10 grains daily. Toxic manifestations were seldom encountered. A few cases developed cyanosis of the lips, drowsiness and a feeling of lassitude. In the majority of these cases cultures were made in order to identify the organisms, and in all instances, except for the specific cases, were mixed infections containing streptococcus hemolyticus, staphlococcus-pyogenes albus and staphlococcus-pyogenes aureus. In some cases a pure culture of one of these organisms was obtained. Response in the average case was dramatic; a fall of temperature, if fever existed, occurred in twenty-four to forty-eight hours and the inflamed area subsided rapidly. The drug was continued at the dosage mentioned, in milder cases, five to seven days. Incidents, such as toxic skin rashes, photo-sensitizing reactions, methemoglobinemia, sulphemoglobinemia or granulocytopenia, did not occur in this series of cases. One case developed a specific febrile reaction. When larger doses of the drug were used toxic reactions occurred in the majority of the cases. When the small dosage failed to produce the desired response in twenty-four to forty-eight hours, it was increased one hundred per cent. at which level it gave, in all instances, the desired result.

Because small dosages have given such excellent results, it may be interesting to review, briefly, some of the extensive literature that has appeared regarding the action, dosage and toxicity of sulfanilamide since May, 1937.

Osgood,[1] in a recent article regarding the major action of sulfanilamide, states that it neutralizes toxins similar to the manner of antitoxin. He further noted that it caused a decrease in the rate of division of the organisms, neutralized the toxin produced by them and permitted phagocytosis by leukocytes which killed organisms that they would have otherwise been unable to kill, thereby confirming other clinical observations that the action of the drug is largely independent of the leukocytes. He also found that in a dilution of 1 to 100,000, which is about ten times as dilute as ordinarily used clinically, it was just as effective in vitro.

The dosage of sulfanilamide which was developed in rules laid down by Perrin Long[2] is, for adults of one hundred pounds or more, an initial dose of 50 to 80 grains. This gave in the blood a level of 10 milligrams per cent. of sulfanilamide in four hours, and to maintain this level it was followed every four hours by 15 grains. In adults from fifty to ninety pounds the initial dose is 30 to 50 grains followed by 10 to 15 grains at four hour intervals, and in children from twenty-five to fifty pounds the initial dose is from 20 to 30 grains followed every four hours by five to ten grains.

The therapeutic dosage of prontosil solution, the hydrochloride of 4′ sulphamide-2, 4 diaminoazobenzene, is 20 c.c. at four hour intervals or a total of 120 c.c. in 24 hours in the average adult; in individuals weighing fifty to ninety pounds, 10 to 15 c.c. at four hour intervals and in children, ten to fifty pounds, 5 to 10 c.c. at four hour intervals. Prontosil is given subcutaneously or intramuscularly but not intravenously. The dosage is the maximum and is recommended

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in very severe streptococcal and meningococcal infections.

In moderately severe streptococcal infections the adult dosage of 15 grains at four hour intervals is recommended and in mild streptococcal infections five to ten grains at four hour intervals. In children five to ten grains every four hours constitutes an effective dose. If no clinical improvement is evident the dose is increased. In lesions of bones such as otitis media, mastoiditis and osteomyelitis, small amounts of the drug should be given for at least two weeks after the acute symptoms have subsided.

Toxic manifestations in standard dosages are common and the majority of cases treated complain of dizziness, anorexia and nausea. Fever, in the form of a specific febrile reaction, occurs in about fifteen per cent. of the cases (Hageman and Blake[3]). The reaction appears in seven to ten days after beginning of therapy. Mild cyanosis of the lips and nails is most commonly encountered. It does not mean that the therapy should be discontinued but the blood should be watched because of the possibility of an idiosyncrasy of the hematopoietic system towards the benzene ring resulting in hemolytic anemia which may require transfusion. The carbon dioxide combining power of the blood is lowered by sulfanilamide. Granulocytopenia occurs in susceptibles (Borst and Young[4]). Due to the fact that the leukocytic response shows no increase when sulfanilamide is administered it created the belief that the drug caused a depression of the leukocytes because a moderate increase was noted after it was discontinued. Fatal cases following treatment with prontosil causing agranulocytosis have been reported in the British literature by J. G. Borst and C. J. Young,[4] and two cases following the use of sulfanilamide in the American literature by Schwartz, Garvin and Koletsky[5] and Berg and Holtzman.[6] Morbilliform skin rashes accompanied by fever occurring eight to fourteen days after therapy have been reported by Schwentker and Gelman.[7] However, with the discontinuance of the drug the rash and fever disappeared in forty-eight hours but recurred on resuming the use of the drug. Practically all toxic reactions are antidoted by a large intake of fluids and discontinuance of the drug if necessary.

Good results have been reported in the treatment of gonorrhea and other infections of the urinary tract by Russell D. Herrold.[8] He estimates good results to the extent of eighty per cent. in chronic cases, acute cases twenty-five per cent. and in non-gonorrheal prostatitis sixty per cent; bladder and urinary tract infections with gram-negative bacilli seventy-five per cent. staphlococcus 50% and his failures were in the majority due to intolerance to the drug.

Henry F. Helmholst[9] used the drug as a urinary antiseptic and in an article comparing the efficiency of mandelic acid and sulfanilamide concludes that sulfanilamide can be used in acute infections, particularly the proteus type, whereas, mandelic acid has to be given in the subacute and chronic stages. In another article regarding urinary antisepsis he showed that sulfanilamide produced a strongly bactericidal urine for most organisms which cause infections of the urinary tract. The dosage to produce bactericidal urine was considerably less than in streptococcic cases. Furthermore, it acted as well in alkaline urine as acid and could be used in acute and chronic infections of the urinary tract even if renal insufficiency existed. One microorganism, the streptococcus fecalis, at all times resisted the action of the drug in his report.

Sulfanilamide acts in a near specific manner on beta-hemolitic streptococcic infections, erysipelas and meningococcic meningitis. The case to be reported is one of beta-hemolytic streptococcus meningitis, complicating a suppurative otitis media, with recovery.

CASE REPORT

History: Patient, white male, 48 years of age, was seen at his home on March 29, 1937, because of projectile vomiting associated with a severe occipital headache and a temperature of 105 degrees Fahrenheit. He had become stuporous during the preceding twenty-four hours. His family stated that he had been ill for two weeks. His primary illness was an acute tonsillitis and at the end of the first week he developed pain in the right ear. The ear drum ruptured spontaneously three days later and had been discharging for four days, during which time he vomited frequently and complained bitterly of vertigo. A tentative diagnosis of otitis media and labyrinthitis was made and, because of the threat of meningitis, the patient was immediately hospitalized.

Examination: On admission the patient appeared acutely ill, skin was flushed and moist and he was in a stuporous state. The pupils reacted to light sluggishly and the left was one-half the diameter of the right. The right ear was draining a seropurulent material and there was no swelling about the mastoid. The

throat was congested. The tendon reflexes were normal, the abdominals diminished, the plantars lively and the Kernigs negative. There was no cervical rigidity. Heart and lungs findings were normal and the remainder of the physical findings were essentially negative. The temperature was 104.6 degrees Fahrenheit, pulse 120, respirations 22 and blood pressure 120 systolic, 70 diastolic. Mastoiditis was considered and an x-ray examination of the mastoid area was made which revealed negative findings. Examination of the blood was as follows: hemoglobin 92 per cent., erythrocytes 4,820,000, leukocytes 24,150, polymorphonuclear leukocytes 87 per cent., lymphocytes 22 per cent., band cell forms 1 per cent. The urine was amber, acid in reaction with a specific gravity of 1,027, negative sugar, three plus albumin and microscopically showed occasional pus cells.

Course: The temperature dropped to 100 degree in twenty-four hours after admission and the patient was much more comfortable. On March 31 the Kernigs became positive and there was slight rigidity of the cervical spine. The temperature rose to 103.6 degrees, pulse 90, respirations 22. A spinal puncture was performed and the fluid was milky in color and under pressure. Because of the lack of an available manometer no pressure reading was made. The spinal fluid gave a count of 1500 cells per cubic millimeter with a differential of polymorphonuclear leukocytes 74 per cent., lymphocytes 23 per cent., monocytes 3 per cent. The globulin test (Pandy) was two plus. The sugar was 21.2 milligrams per 100 cc. On a smear under gram stain many pus cells containing few gram positive cocci in pairs and chains were seen. Culture on blood agar yielded a growth of pure beta-hemolytic streptococci. The colloidal gold test showed a typical meningitic curve. The diagnosis was beta-hemolytic streptococcus meningitis complicating a middle ear infection and consultation was asked for. The consultant, Dr. O. O. Stanley of Decatur, Illinois, after concurring in the diagnosis, suggested using prontylin and prontosil. Prontosil was administered in five cc. doses intramuscularly every four hours and Prontylin, 20 grains orally, every six hours.

The temperature on April 1 averaged 103.4 degrees and on April 2 there was a precipitant drop to 99.2 degrees. The pulse rate reduced from 100 to 84. The patient was restless and remained stuporous. A second spinal puncture was performed on April 2, at which time 15 cc. of xanthochromic colored fluid was withdrawn under normal pressure. The cervical rigidity and Kernigs were lessened. The cell count was 500 per cubic millimeter with polymorphonuclear leukocytes 61 per cent., lymphocytes 21 per cent. and monocytes 6 per cent. The gram stain revealed a few pus cells and no bacteria were seen. Culture of the spinal fluid gave no growth and no growth was obtained in any of the succeeding spinal fluid cultures.

On April 3, the patient looked greatly improved, was conscious and fairly well oriented. There was a diplopia and the retina appeared edematous. A urine retention developed which required catheterization. Both Kernigs were lessened, the patellar reflexes were sluggish, the cremasterics and the abdominals absent. The cervical spine rigidity was markedly reduced. The temperature was 100 degrees, pulse 100 and respirations 22.

On April 4 the retinal edema was lessened. The abdominal reflexes showed evidence of returning and the Kernigs were less pronounced than on the preceding day. The temperature was 98.4 degrees, pulse 80 and respirations 20. The patient was conscious, in no pain, was well oriented and his only complaint was the diplopia.

On April 5 the eye grounds appeared normal. The cervical spine was fairly mobile. The abdominal reflexes were again absent but the plantar and patellar lively. There was no ankle clonus. Diplopia still persisted. Urine retention not present and the patient was voiding freely. There was no drainage from the right ear. From this day on the patient made a steady recovery and on April 12 was permitted to be up in a chair.

On April 18 he was able to be on his feet and showed evidence of a slight Meniere's syndrome, swaying to the right when walking. All reflexes had returned to normal except the abdominals. The Romberg was one plus.

On April 24 the patient was discharged from the hospital, his only complaint being weakness, inability to hear with the right ear and a sensation of "slickness," as he described it, of the right side of the tongue. There was no diplopia and eye accommodation had returned to normal. The Meniere's syndrome was absent.

Sulfanilamide Treatment: Prontosil and prontylin given were as follows: starting March 31, 1937, 5 cc. of prontosil every four hours, intramuscularly; prontylin, 20 grains, every six mours until April 3, when it was reduced to 5 cc. of prontosil and 20 grains of prontylin alternately every six hours. On April 7 the prontosil was discontinued and prontylin was given in 20 grain doses twice daily. On April 15, ten grains of prontylin were given three times a day and this dosage continued for two weeks and then was discontinued.

Morphine sulphate in quarter-grain doses and phenobarbital in one and one-half grain doses were given as required for restlessness and pain until April 8.

The bowels were controlled entirely by enemas and at no time were any magnesium or sodium salts given because it has been repeatedly shown they contribute to toxic reactions. The only toxic manifestations were cyanosis, which was more or less generalized, lassitude described on the part of the patient, and occasionally a slight nausea.

Spinal punctures were performed on March 31, April 2, 3, 4, 5, 6, 7, 8 and 9, with cell counts as follows:

March 31—1500 cells per cu. mm.
April 2— 500 cells per cu. mm.
April 3—3100 cells per cu. mm.
April 4—1850 cells per cu. mm.
April 5— 325 cells per cu. mm.
April 6— 570 cells per cu. mm.

April 7— 175 cells per cu. mm.
April 8— 200 cells per cu. mm.
April 9— 181 cells per cu. mm.

With each puncture an average of 10 to 15 cc. of spinal fluid was withdrawn.

Blood counts were made at three to four day intervals in order to detect any evidence of an anemia or granulocytopenia. Slight anemia was noted on April 12.

The urine was strawberry or brick-red in color during the time of administration of prontosil, the gravity remained within normal levels. Prior to the sulfanilamide therapy, albumin was three plus with occasional pus cells and bacteria to be found microscopically. During the sulfanilamide therapy the albumin reduced to a trace and there were less pus cells and baceria found. The reaction remained acid at all times.

Since recovery the patient has enjoyed a good state of health and was able to return to work on June 28, 1937. Hearing in the right ear was damaged. At present he is able to detect high and low pitched tones but it is difficult for him to identify those of medium pitch. He is unable to hear a watch tick at any distance or when the watch is placed directly against the external ear. The disturbed sensation of the right side of the tongue is no longer present.

SUMMARY

Sulfanilamide has proved to be a most useful drug in our hands in many forms of moderate and severe infection, espceially hemolytic streptococcus.

The large dosages recommended in the literature are seldom required and in our experience the patients usually do better on the smaller dosage which minimizes the toxic reactions.

A severe case of beta-hemolytic strepococcus meningitis, complicating a suppurative otitis media, with recovery is reported.

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DISCUSSION

Dr. Catharine Logan, Oak Park: In this paper Dr. Goodyear has indicated the two important factors which contribute to the great value of sulfanilamide in general practice: the variety of diseases which respond to its use, and the fact that all infected body tissues from the skin to blood and bone can be reached by this relatively safe drug.

We have found, too, that in many cases small doses are effective. Furthermore, when sulfanilamide is to be used over long periods we find that toxic effects are avoided while the therapeutic effect is maintained by using it in ten to fourteen-day periods with four or five day rest periods.

The investigators are not all agreed as to the mechanism of the sulfanilamide effect. We have studied the drug intensively for a year but have seen no evidence of increased phagocytosis except in pneumonia. Blood culture studies which demonstrate first dissociation of the bacteria and later their complete disappearance, offer supportive evidence for the theory that the main effect is upon the invading organism. As for the action of prontylin *in vitro*, the results are largely dependent upon the age of the strain used. Freshly isolated organisms are much more resistant than are stock cultures.

Besides the diseases enumerated in Dr. Goodyear's paper as responding to sulfanilamide, we have used it successfully in a number of cases of bacterial endocarditis presenting positive blood cultures of green streptococci, in pneumococcus peritonitis and in infectious arthritis. These patients have all had positive blood or fluid cultures of some type of streptococcus at the beginning of treatment which have, under sulfanilamide, become negative. Deeply staining, well-formed organisms in the direct smears of positive culture joint fluid become deformed, poorly staining cells when the fluid culture is negative.

It is important to recognize that sulfanilamide is of value both in acute and in chronic infections. Everyone knows of results in severe acute infections. Typical of its possibilities in chronic infections is a case of bile tract infection of eight years duration, manifested by daily chills and fever of 101 to 102 degrees. After three operations upon the gall-bladder and common ducts the surgeons refused further efforts in an area where every landmark was obliterated. After three days of prontylin treatment the chills and fever ceased and improvement has gone steadily forward.

Finally, sulfanilamide becomes even more the general practitioner's drug when it goes beyond the broad limits of streptococcus and staphylococcus infections. Two cases of undulant fever have been cured by sulfanilamide; both were long-standing cases and had been resistant to specific therapy. High dilutions of the sera of both patients agglutinnated brucella abortus, and in both patients we obtained immediate improvement and rapid cure by the use of prontylin.

MULTIPLE PRIMARY MALIGNANT TUMORS

J. S. Eisenstaedt, Chicago (*Journal A. M. A.*, June 18, 1938), reports the case of a man who died in 1936 and who had been operated on twenty-one years before for adenocarcinoma of the kidney. Later two other primary cancers developed in distinct and separate organs (prostate and sigmoid colon), one of which, that of the prostate, produced metastases to the lungs and lymph nodes. All three cancerns were diagnosed clinically. It is the author's belief, after a rather complete survey of the literature, that: 1. Multiple primary cancers are more frequent than are reported. 2. They occur more frequently than cancer alone would explain. 3. The percentage of multiple primary malignant tumors to be reported in the future will be higher than that recorded in the past, because: (*a*) More people are reaching advanced years, a period in which the incidence of cancer is generally high. (*b*) Since the inauguration of cancer clinics and commissions throughout the world, cancer patients have been more concentrated and more thoroughly studied. (*c*) Better results are being obtained in the treatment of cancer than heretofore. (*d*) As a result of longer survival after treatment for a single primary tumor, time is afforded for the development of subsequent primary cancers. (*e*) Autopsies are more widely done and with greater thoroughness than in the past. 4. Some factor, as yet unknown, possibly hereditary or hormonal in nature, plays an important part in susceptibility to malignant disease and the varied responses to environment in different individuals depends on this unknown element.

PATHOLOGY OF VITAMIN C DEFICIENCY

After discussing the pathologic changes that occur in the bones, teeth, gingiva, muscles, eyes and skin consequent to a deficiency of vitamin C, Gilbert Dalldorf, Valhalla, N. Y. (*Journal A. M. A.*, Oct. 8, 1938), concludes that the anatomic effects of vitamin C deficiency are prompt to appear, certainly in the young, and that they occur, if the vascular changes are included, even in the mildest degrees of deficiency. Since clinical reports agree that subclinical scurvy, whether on the basis of chemical tests or measurements of capillary strength, is common, it may be assumed that morphologic stigmas due to the same deficiency are likewise common. However, both clinical and anatomic identification of scurvy remains as it always has been, a matter of alertness on the part of the physician. The recently acquired understanding of the scorbutic process affords pathologists and biologists a useful tool in the study of disturbances of intercellular materials. It should be of value also in the study of similar changes in senility.

Society Proceedings

COOK COUNTY

The Chicago Medical Society held its October meeting at the Chicago Woman's Club, 72 E. Eleventh St., with Robert H. Hayes presiding. The program follows:

Sulphanilamide, the Drug—Paul N. Leech, Secretary Council on Pharmacy and Chemistry, American Medical Association.

How Sulphanilamide Acts—E. M. K. Geiling, Professor of Pharmacology, University of Chicago (by invitation).

A Clinical Evaluation of Sulphanilamide—John S. Lockwood, Harriet M. Frazier Fellow Surgical Research, The School of Medicine, University of Pennsylvania.

Pathology—Paul R. Cannon, Professor of Pathology, University of Chicago (by invitation).

Discussion—Mr. Walter G. Campbell (guest), Chief, Food and Drug Division, Department of Agriculture, Washington, D. C.

Its Value in Obstetrics—Joseph Baer.

Its Value in Urology—Russell D. Herrold.

Its Value in Pediatrics—Julius H. Hess.

Its Value in Internal Medicine—Italo Volini.

OGLE COUNTY

The Ogle County Medical Society held the October meeting at the Rochelle Town and Country Club on October 20. Election of officers for 1939:

President, G. S. Henderson, Holcomb; Vice-President, J. S. Moffatt, Byron; Secretary and Treasurer, A. R. Bogue, Rochelle; Censor for 3 years, M. S. DuMont, Mt. Morris.

Dr. F. H. Falls, Professor of Obstetrics and Gynecology, University of Illinois, explained very thoroughly and clearly the progress and aims of the work under the Maternal Welfare Committee. Following this, the talk on "Management of Prolonged Labor" was enjoyed by all the doctors. This subject was exceptionally well illustrated with slides. In spite of an urgent call for Dr. Falls to make, he was detained by many interesting questions.

Marriages

William Edward Bretz to Miss Ruth Emily Converse, both of Hinsdale, Ill., September 10.

Herman L. Meltzer, Clinton, Ill., to Miss Elsie Thornton of Farmer City in St. Louis, August 18.

Edward John Purchla, Chicago, to Dr. Rose Hedwig Kwapich of Toledo, Ohio, September 27.

John J. Sazama, Jr., Brookfield, Ill., to Miss Sonia Gorecki of Chicago, August 20.

James S. Templeton, Pinckneyville, Ill., to Miss Isabelle J. Boeheim, September 1, in Du Quoin.

Personals

The Adams County Medical Society was addressed in Quincy, October 10, by Dr. Warren R. Rainey, St. Louis, on "Management of Acute Inflammatory Conditions About the Anus and Rectum.

Dr. Lindon Seed, Chicago, discussed "Diseases and Infections About the Floor of the Mouth" before the St. Clair County Medical Society, Belleville, October 6.

Drs. Clifford G. Grulee, Evanston, and William J. Dieckmann, Chicago, addressed the Knox and Warren county medical societies in Galesburg, September 22, on "Care of the Premature Infant" and "Forceps Delivery," respectively.

Homer W. Smith, Sc. D., director of the physiologic laboratory, New York University, delivered the tenth annual William T. Belfield memorial lecture before the Chicago Urological Society, October 27, on "Physiology of the Kidney."

Dr. Charles H. Best, professor of physiology, University of Toronto Faculty of Medicine, Toronto, addressed a joint meeting of the Institution of Medicine of Chicago and the Chicago Society of Internal Medicine at the Palmer House, October 28, on "Heparin and Thrombosis."

Speakers before the Chicago Laryngological and Otological Society, October 3, were Drs. Thomas C. Galloway, Evanston, Ill., on "Postural Treatment in Acute Laryngotracheobronchitis"; Francis L. Lederer, "Early Diagnosis and Treatment of Laryngeal Carcinoma," and Joseph C. Beck, "Living Patients with Laryngectomies—Instruments for Otolaryngeal Diagnosis.'

Drs. David S. Hillis and Clifford Grulee presented a program on "Management of Prolonged Labor" and "Care of the Premature Infant" before the Rock Island County Medical Society, October 11.

Dr. Guy M. Cushing was invited to give a paper on "Acute Perforating Ulcer of the Stomach" before the Will-Grundy County Medical Society on October 12.

Dr. Frederick H. Falls was asked to discuss "The Value of Prenatal Care" before the McDonough County Medical Society, October 12.

Drs. Charles B. Reed and Bert I. Beverly presented a program on "Medical Complications of Pregnancy" and "Behavior Problems" before the Carroll-Jo Daviess County Medical Societies, October 12.

Dr. Gustav L. Kaufmann gave an address on "Infant Feeding" at the October 13 meeting of the Stephenson County Medical Society.

Dr. Edward L. Jenkinson was elected president-elect of the American Roentgen Ray Society at the Thirty-Ninth Annual Meeting, Atlantic City, N. J. The Fortieth Annual Meeting will be held in Chicago, September 19-22, 1939.

Maurice L. Blatt showed his moving pictures of active rabies before the Fifth District Medical Society in Atlanta, Ga., on October 6. He addressed the students of Emery University School of Medicine, Atlanta, Ga., on October 7, subject, "Neuro-muscular Disturbances in Childhood.'

Rollo K. Packard was invited to address the Central Illinois & Eastern Iowa Medical Association at a banqut in Davenport October 7, subject, "Socialized Medicine."

I. R. Sonenthal, John A. Wolfer and Lee C. Gatewood presented the scientific program at the October 6 meeting of the Stephenson County Medical Society.

Don C. Sutton gave a paper on "Heart Disease" before the Madison County Medical Society on October 7.

M. Herbert Barker spoke before the Rock County Medical Society at Janesville, on September 27, on "Types of Hypertension and Treatment."

Drs. Robert A. Black and Ralph Reis presented a program on "Rheumatism and Heart Disease in Childhood" and "Medical Complications of Pregnancy" before the Knox-Warren County Medical Societies on October 20.

Drs. Archibald Hoyne and James H. Bloomfield gave a program on "Meningitis" and "Placenta Previa" before the Stephenson County Medical Society, October 20.

Drs. Charles Edwin Galloway and Maurice Blatt were on the program sponsored by the Fifth Councilor District of the Illinois State Medical Society at Mason City, October 21, with papers on "Lesions of the Cervix" and "Fevers in Children and Their Treatment."

Dr. Clara Jacobson was invited to address the Health Section of the District Conference of Illinois Federation Women's Club, October 27.

Dr. Frederick H. Falls addressed a public meeting at Quincy, October 27, on "Importance of Prenatal Care."

Dr. Samuel J. Fogelson gave an address on "Treatment of Gastro-Duodenal Ulceration" before the Fulton County Medical Society at Canton, October 25.

Dr. Warren H. Cole was asked to address the

Tri-County Medical Society meeting at Galesburg, October 25, on "Hyperthyroidism."

Drs. Joseph K. Calvin and A. F. Lash gave a scentific program on Nephritis and Puerperal Sepsis before the Stephenson County Medical Society, October 27.

Dr. Aaron Arkin gave a talk on "Differential Diagnosis of Organic Heart Disease" before the Kankakee County Medical Society on October 13.

Dr. Eugene Cary gave a piper on "Management of Prolonged Labor" before the Stephenson County Medical Society on October 13.

Dr. Lowell D. Snorf spoke October 4 on the "Functional Disorders of the Intestinal Tract" before the 94th annual meeting of the Northwestern Ohio Medical Association.

Dr. Herman L. Kretschmer read a paper at the 89th Annual Meeting of the Indiana State Medical Society, at Indianapolis, October 6, on "Cystitis in Women and Female Children."

Dr. Jos. C. Rheingold addressed the DeWitt County Medical Society, Clinton, Ill., on October 5, on "Marital Counselling—A Medical Service" and on October 6 before the Teachers' Institute on "The Teacher's Influence in Molding the Pupil's Personality."

Dr. Harry L. Huber delivered an address before the Mississippi Valley Medical Society in Hannibal, Mo., September 28, on "Allergy in General Practice."

Dr. Joseph L. Baer was a guest speaker at the Annual Meeting of the Michigan State Medical Society. His subject before the general session was "Progress in Maternal Welfare"; at the Maternal Welfare Committee luncheon, "Opportunities and Responsibilities of County Medical Societies in Maternal Welfare," and before the section of Obstetrics and Gynecology, "Prolapse of the Uterus."

Dr. Noel G. Shaw addressed the doctors of Macoupin and Montgomery County Medical Society on "Infantile Eczema" November 17, at Litchfield, Ill.

Dr. Robert S. Berghoff was invited to give a talk on "Heart Disease" before the Coles-Cumberland County Medical Society on October 19.

Dr. August F. Daro was the first winner of the new Chicago Medical Society Championship Trophy, which is to be awarded annually to the champion in the annual golf tournament. Dr. Daro tied with Dr. Homer K. Nicoll with a score of 78 at the tournament at the Olympia Fields Country Club August 31 and the tie was played off at the North Shore Country Club September 18, with Dr. Daro the winner. Dr. Grover E. Johnson won the VanDerslice Trophy with a gross score of 79 and Dr. Harry E. Mock the Sisson Trophy for low net with a score of 32-63—95.

News Notes

—The Illinois State Medical Society has changed the date of its 1939 meeting from May 16-18 to May 2-4 to avoid conflict with the annual session of the American Medical Association in St. Louis, May 15-19.

—Colonel George de Tarnowsky, Medical Reserve Corps, U.S.A., will deliver the Armistice Day Lecture, sponsored by the Faculty and Alumni of the College of Medicine of the University of Illinois, on Friday, November 11, at 10:45 a.m., in room 423 of the College of Medicine, 1853 West Polk Street, Chicago.

—The Educational Committee of the Illinois State Medical Society has an exhibit in St. Louis at the Annual Meeting of the American Dental Association. The Educational Committee will have an exhibit at the Annual Meeting of the Illinois State Nurses Association, October 19-21.

—The Peoria City Medical Society held a dinner October 13 at the Pere Marquette Hotel in honor of its past presidents. Representative Everett Dirksen, as the principal speaker, discussed "The Present Day Status of Medicine in Congress." Twenty-seven former presidents of the society attended.

—A tuberculosis sanatorium for Lake County is to be built near Waukegan with a PWA grant of $193,091 and a fund of $233,000 to be raised through a bond issue and a tax levy, *Hospital Management* reports. The sanatorium will have a capacity of ninety-two beds. There will also be a nurses' home and a physicians' residence.

—The Institute of Medicine of Chicago announces that the Elizabeth McCormick Child Research Grant of $750 has been awarded for 1938-1939 to Dr. John A. Bigler for his research on "Combined Tetanus and Diphtheria Immunization."

—Without charge, Lloyd Brothers, Pharmacists, Inc., Cincinnati, Ohio, offers to any interested doctor or pharmacist a handsome reproduc-

tion in rotogravure of a photograph of the late Professor John Uri Lloyd, father of colloidal chemistry and Remington medalist. The reprint is on heavy paper and suitable for framing.

—Dr. Morris Fishbein, editor of the *Journal* of the American Medical Association, is giving a special series of lectures at the University of Illinois College of Medicine each Monday evening at 5 p.m. in room 423, 1853 West Polk Street, Chicago, during October, November, December and January (excluding holidays).

The series includes a discussion of Medical Practice, Medical Ethics and Medical Economics, presented especially from the historical and evolutionary point of view. The problems arising out of the recent Health Conference at Washington, D. C., will receive special consideration. All physicians in Illinois are cordially invited to attend these lectures.

—The fiftieth anniversary of the founding of Abbott Laboratories, pharmaceutical manufacturers, in North Chicago, was celebrated October 7, with the dedication of a new laboratory building and a special program in the afternoon following an inspection tour in the morning. The speakers were:

Karl T. Compton, Ph. D., president, Massachusetts Institute of Technology, Cambridge, Mass., "The University and the Public Welfare."

Dr. Herbert M. Evans, Berkeley, Calif., professor of anatomy, Morris Herzstein professor of biology, and director of the Institute of Experimental Biology, University of California Medical School, "The Task and Spirit of Research."

Dr. Thomas Parran, surgeon general, U. S. Public Health Service, Washington, D. C., "Research and Public Health."

The evening program was presented at the Palmer House with the following speakers:

Harrison E. Howe, Sc. D., Washington, D. C., editor, *Industrial and Engineering Chemistry*, "The Contributions of Organized Chemistry."

George D. Beal, Ph. D., assistant director, Mellon Institute, Pittsburgh, "The Scientific Development of Drug Standards."

Dr. Morris Fishbein, Chicago, editor. "The Contributions of Medicine to the Public Welfare."

The new building is three stories high with an attic and basement, providing facilities for the chemical, bacteriologic, botanic, medical and pharmaceutic research activities of this firm. In addition to laboratories it contains a micro-analytic laboratory, a library with accommodation for 20,000 volumes, hot and cold rooms for stability studies, dark rooms on each floor for the use of optical instruments, one dark room for use as a laboratory for light sensitive reactions, and an air conditioned auditorium seating 800 persons.

Deaths

Charles Edwin Blomgren, Chicago; Rush Medical College, 1899; a Fellow A. M. A.; on the staff of Augustana Hospital; died, July 6, at his summer home in Lake Geneva, Wis., of coronary thrombosis and arteriosclerosis.

Thomas Archibald Davis, St. Petersburg, Fla.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1885; a Fellow A. M. A.; member of the Illinois State Medical Society; Fellow of the American College of Surgeons; formerly professor of surgery and clinical surgery at his alma mater; at one time president and professor of surgery at the Illinois Post-Graduate Medical School; for many years surgeon to the Cook County Hospital and the West Side Hospital, Chicago; aged 80; died, September 19, at his summer home in Delavan, Wis.

George Nelson Heilig, McClure, Ill.; Barnes Medical College, St. Louis, 1902; member of the Illinois State Medical Society; member of the board of education; aged 61; died, August 16, in the Southeast Missouri Hospital, Cape Girardeau, Mo., of angina pectoris.

Richard Henry Howard, Chicago; Meharry Medical College, Nashville, Tenn., 1916; aged 49; died, August 22, in the Provident Hospital of heart disease.

Charles Asa Hoag, Chicago; Chicago Homeopathic Medical College, 1891; aged 71; died, July 17, of organic heart disease.

Otto Paul Ludwig, Chicago; Milwaukee Medical College, 1909; aged 53; died, July 25, of cerebral hemorrhage and hypertension.

Emily M. Luff, Oak Park, Ill.; Hahnemann Medical College and Hospital, Chicago, 1894; aged 75; died, August 8, of cerebral hemmorhage.

Henry Anthony Merkel, Wilmington, Ill.; University of Maryland School of Medicine, Baltimore, 1916; a Fellow A. M. A.; served during the World War; for many years health officer; aged 47; died, July 26, of heart disease.

David O'Shea, Chicago; Rush Medical College, Chicago, 1883; aged 83; died, July 24, of carcinoma of the rectum.

William H. Riley, Ridgway, Ill.; Eclectic Medical Institute, Cincinnati, 1880; aged 82; died, July 26, of malaria.

Richard Vance Spencer, Chicago Heights, Ill.; University Medical College of Kansas City, Mo., 1907; served during the World War; aged 59; died, July 11, of pneumonia.

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THE PHYSIOLOGY OF VITAMIN C

C. G. King, Pittsburgh (*Journal A. M. A.*, Sept. 17, 1938), states that dry seeds contain practically no ascorbic or dehydroascorbic acid but, when they are moistened and warmed, ascorbic acid appears within a few hours in the areas where the sprouting processes are apparently initiated. Unripe, rapidlly growing seeds, such as green peas, are relatively rich sources of the vitamin, but as ripening advances the concentration approaches zero. All actively growing parts of the higher plants (roots, stems, buds and pods), all fresh green leaves, many of the algae and perhaps even bacteria contain significant quantities of the vitamin. The carotenoid pigments are frequently accompanied by high concentrations of ascorbic acid in both plant and animal tissues, as in rose hips, paprikas and corpora lutea, but there are many exceptions to such a relationship, as in vitamin rich, nonpigmented sprouts. Of the extensive number of animals studied, only man, the other primates and guinea pigs do not have a capacity to synthesize ascorbic acid. In relation to infant nutrition and from the point of view of comparative physiology, human milk normally contains from four to five times more vitamin C than cow's milk. The human infant has a high dietary requirement to meet the need for rapid growth and general metabolism, but the calf is not dependent on a dietary supply, its current requirement being met by tissue synthesis, as in the rat and the chick. When the human mother's diet is seriously deficient in antiscorbutic foods, however, the concentration in the milk gradually falls to approximately that of cow's milk and when the vitamin C intake is increased, the antiscorbutic value of the milk returns to normal. The most clearly established functional role of vitamin C in animal tissues is in relationship to the physical state of the "intercellular material," as described by Wolbach and his associates. The relationship of vitamin C to calcium metabolism is intimately associated with this phenomenon. Both roles are clearly of major importance in relation to growth and repair of bones and teeth, and it is evident that other tissues, such as cartilage and white fibrous tissue, are markedly affected in a similar manner. The chemical mechanism through which the vitamin brings about this control of metabolism is still unknown. From the close relationship between growth and vitamin C content it is reasonable to conclude that the vitamin has an essential role in the over-all growth processes of animals and plants. At the present time it is impossible to indicate with certainty any specific relationships between vitamin C and the enzymes in animal tissues so far as normal physiologic processes are concerned; but many papers record activating and inhibiting effects on enzymes in vitro and it is not unlikely that some of the observed effects will prove to be physiologically significant.

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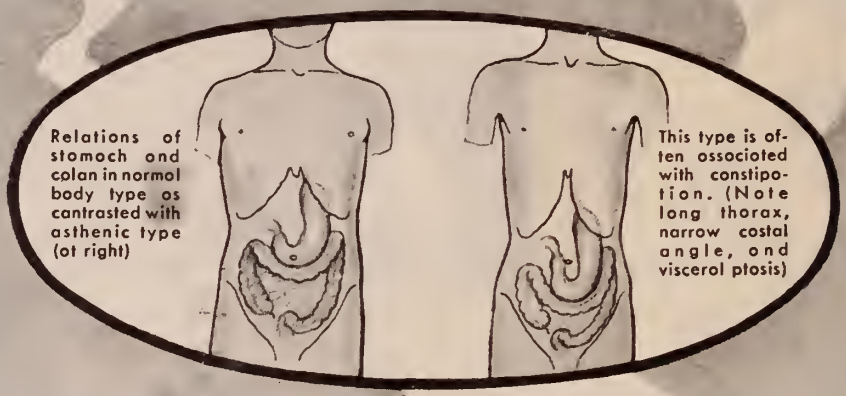
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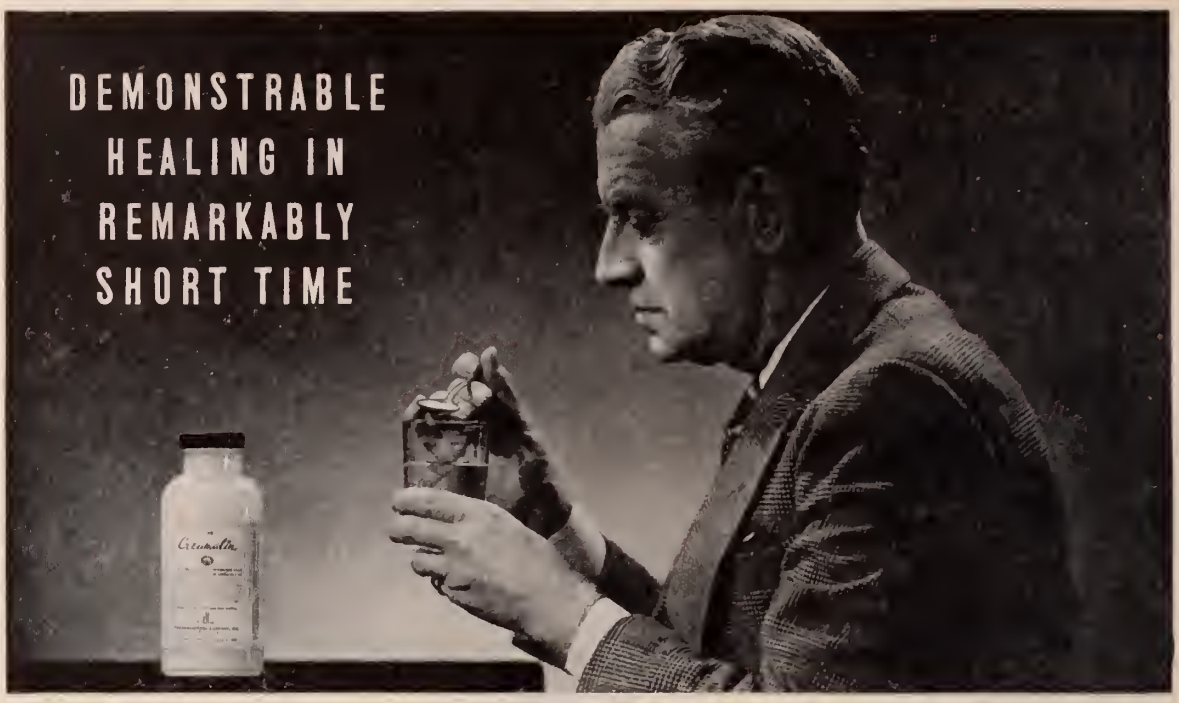
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*Horsfall, F. L., Canadian Pub. Health J.; October, 1937.

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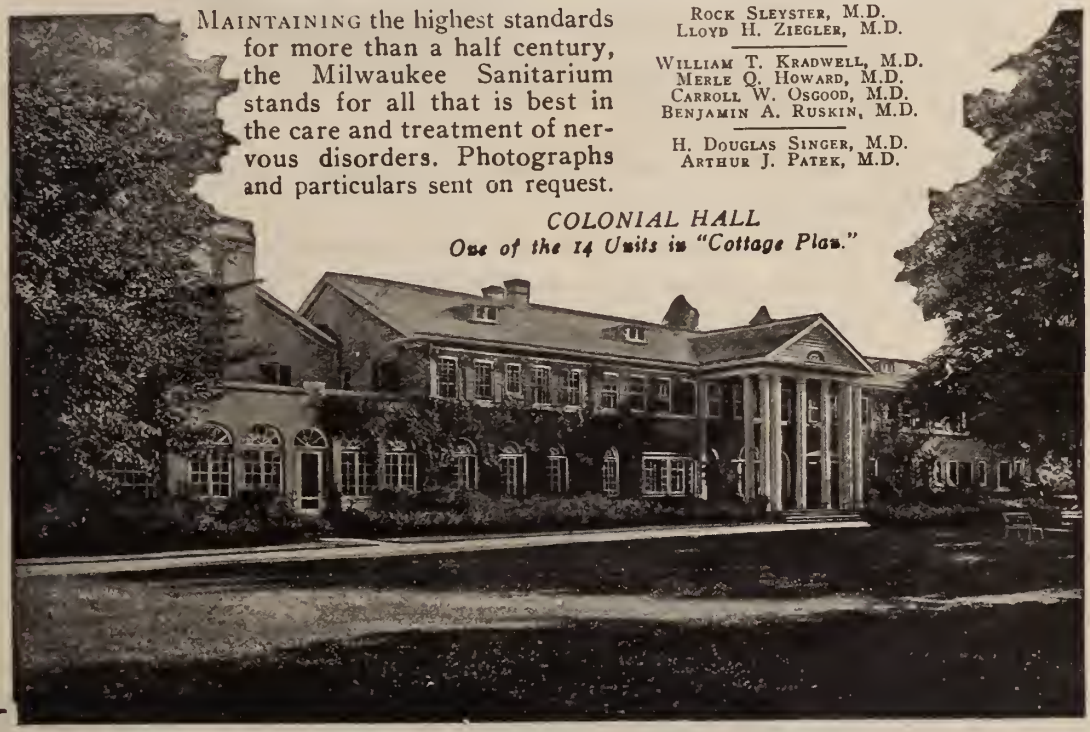
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It is now known that at least ten different sterol derivatives are capable of exhibiting the physiologic properties of vitamin D. Of these, only two may be considered of prime importance as far as practical application in human nutrition is concerned, namely, the activation products of ergosterol and 7-dehydro-cholesterol. The remaining forms are of considerable theoretical importance in that their identification has completely established the multiple nature of vitamin D (2).

Further research has also defined more closely not only the vitamin D requirements of normal infants and children, but also of premature infants and those peculiarly susceptible to rickets. Apart from conditions of pregnancy and lactation, the possible requirement of the human adult for vitamin D is still not known (3). The International system of expressing vitamin D potency has been universally adopted; bioassay methods have been standardized (4); and last but not least, a high degree of standardization has been attained, not only in regard to the antirachitic potency of Vitamin D preparations, but also as to the extent to which the vitamin D contents of certain foods should be increased by the various means available (3).

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(1) 1932. J. Amer. Med. Assn. 99, 215 and 301.
(2) J. Amer. Med. Assn. 110, 2150.
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From U. S. Weather Bureau Records

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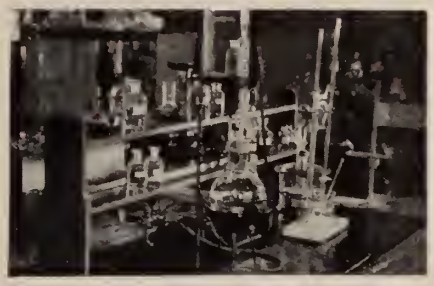
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Editorials

THE DYING KING

"Were we to be directed from Washington when to sow and when to reap, we should soon want bread."

"Our country is too large to have all of its affairs directed by a single government."

—Jefferson.

BEFORE WE TURN OUR OWN BABIES AND OTHER SAFEGUARDS OVER TO UNCLE SAM, LET US TAKE A SURVEY AND ASCERTAIN HOW EFFICIENTLY HE PROTECTS HIS OWN OFFSPRING

Samuel B. Pettengill, a Democrat, member of Congress from Indiana, in his book "Jefferson The Forgotten Man," chapter 8, pages 48 to 55, says:

"Before proceeding further to obliterate the states, counties, cities, and towns; before wiping out the last trace of local responsibility of cities and citizens and turning over to the great white Father at Washington the welfare of 130,000,000 people, let us see how Washington, D. C., is run. Let us take a look at the demi-gods of Federalism behind the scene."

After describing the geographical dimensions of the capital city, the physical beauty and other attributes, we quote further.

Having said this, let us take a closer look at Washington, the capital of the nation, the baby of Uncle Sam. Let us go through the experiment station of federal government. Let us see how Uncle Sam has raised his own babies. It will be worth our while to do so before we turn our own babies over to his tender care; before we abandon state rights to his protection.

Every community is first of all interested in its own health. That is one of the things that Chambers of Commerce brag about with respect to their own localities. How about Washington and the health of the people who live in our federal city? For the year 1936, per 100,000 population, the vital statistics of Washington and

the Nation show that the death rate in the District of Columbia was 26% higher from cancer than the same death rate in the whole United States; 27% higher from heart disease; 49% higher and going up from pneumonia; 92% higher from tuberculosis; 106% higher from alcoholism; 119% higher from syphilis. So, on this vital question of health, put down the home of the Federal government on the one side and on the other side the average of health conditions throughout the rest of the nation. Then ask yourself whether the Federal government is doing such a good job in comparison with what is being done back in your home town, as to lead you to want it to take complete responsibility for the health of your own children.

For every 1,000 live births in the District of Columbia, the infant mortality rate is 26% higher than that of the whole United States, and the maternal death rate is 91% higher. Perhaps I should again remind you that I am giving figures about Washington, D. C., not one of the abandoned coal towns of West Virginia or a mill town in the South. These are the figures of the model city of a benevolent paternalism.

I should further remind you that it is the home of the Bureau of Public Health Service of the mightiest nation in the world. It is where the health officers of the Federal government themselves live.

And what about crime? That is a subject that interests people in the town where they might settle and raise their children. Washington is not without police officers. It is not that trustful of humanity. In fact, Washington has five separate police forces, the Metropolitan or City Police, the Capitol Police, the White House Police, the Park Police, and the Zoo Police. It is also the home of the G-men, "masters of crime." It is where they live and breathe and have their being. It is the city of the Department of Justice of the Federal government. It is the one city and the one district in which the Federal government has sole and exclusive authority and jurisdiction on all matters of law and order.

How does Washington compare in this important matter of crime with other cities in the United States? The comparison has been made by the chief law officer of the Federal government, Honorable Homer S. Cummings, Attorney General of the United States. That is what Mr. Cummings said last January at a meeting of the Washington Crime Forum:

"The crime situation in the District of Columbia amounts to a *national disgrace.* Washington should be a model city.

"Authentic statistics, covering the period from July to September, 1937, inclusive, indicate that out of *ninety-three cities with a population of more than 100,000,* Washington ranks in the *10 per cent of cities* with the *most crime* and that Washington is the *tenth* from the top of a list in the number of *murders and non-negligent manslaughters.* In the number of aggravated assaults it is *eighth* from the top of the list. In the number of automobile thefts under $50, it is *seventh.* In the number of *thefts* under $50, it is *sixth.* In the number of thefts more than $50, it is *third.* In the number of *robberies* it is *seventh.* In the number of *burglaries* and *housebreakings* it is *fifth.*

"Our resourcefulness as a city and as a nation is at a low level if we can't control major crimes and racketeering in an area of seventy square miles. The District of Columbia should be a model for the country—clean and free from lawlessness. Instead it *stands forth conspicuously as a crime center.*"

This is not in Chicago, Ill., or St. Louis, Mo., or New Orleans, La. This is Washington, D. C. It is an example of how the Federal government does things. It is what we find on the other side of the magnificent public buildings.

The next thing which the average citizen and his wife are interested in is housing. Let us look beyond these "magnificent distances" in Washington and see what exists in the nation's capital. The real property inventory of 1934, taken under the auspices of the United States, shows that in its capital city, there were more than 14,000 dwelling units without inside toilets; more than 4,000 without inside running water; more than 11,000 using kerosene lamps, more than 6,000 needing major repairs; more than 2,000 dwelling units unfit for use. Only two of the 64 American cities surveyed in this real property inventory had more houses unfit for use, or in need of major repairs but in use.

This is not some city whose people dwell in regimented shacks built by soulless corporations. We are not writing of conditions in Harlan County, Ky., where the Federal government charges that the coal barons condemn their wage

slaves to wretchedness. This, I must again remind you, as it is necessary for me to constantly remind myself is Uncle Sam's home. There is no large industry in Washington, no factories, no coal mines, no denuded hillsides. This is Washington. It is the place where the Federal Housing Administration lives and where the Home Owners Loan Corporation has offices air-cooled by the taxpayers living back home.

Washington, D. C., is also a city as little affected by the peaks and valleys of the economic cycle as any city in America. No factories close their doors on willing workers in Washington. The tentacles of the robber barons of Wall Street do not here condemn the citizens of Washington to the conditions I have detailed. It is a city of steady employment, of men and women paid from the longest purse in the world. As recently computed, it is the home of 111,130 Federal employees, and constantly growing in number, who never knew there was a depression in America in the years following 1929 until in March, 1933, when they were asked to take a 15% pay cut. The plight of thousands in private industry taking a 50% or 100% pay cut and being without jobs for months and years on end, is not responsible for conditions at Washington, the model city of a benevolent paternalism.

One third of the nation is ill-housed. We don't have to go down South to find them. It is not necessary to look that far. One need only lean out of a window in the Senate office building and see, and hear, and smell Schott's Alley, notorious for crime and disease.

Well, how about education? There is something that interests the fathers and mothers of America,—education in the nation's capital. In October, 1937, there were four school buildings housing 1,537 pupils, which buildings had been recommended for early abandonment in 1908—*29 years ago, but were still in use.*

In other school buildings classes were being held in basement rooms, play rooms, and corridors. A shift system was in effect in some schools in the nation's capital wherein two sets of children in the lower grades used the same room for shortened class periods. Although the normal class size is 35 to 40 pupils, there were 46 classes in excess of 50 pupils, and some classes ran up to as many as 84 children. There were 2,478 grade school children in classes in excess of the normal 40 to a class. There were 3,789 Junior and Senior High School students in excess of capacity.

We have heard much recently about the Federal government taking over the education of the children of the nation on the ground that the states and the cities are doing such a lamentable job. The uplifters and the bureaucrats constantly think up new reasons for extending their activities and increasing their payrolls. But in Washington, D. C., in the year of our Lord, 1937, of the many versions of the little red school house, there were 14 one-room grade schools, set up in play ground space, and heated by a coal stove in the rear of the room.

I should add at this point that Washington, D. C., is the home of the Office of Education, housed in the magnificent building of the Department of the Interior, which is constantly engaged in advising the rest of the nation how to educate its children.

At this point it may be of some interest to quote from the Report of the Advisory Committee on Education, appointed by President Roosevelt, in its report of February, 1938; they say—

"The Committee has detailed the situation of the District of Columbia at some length, because it believes that in no instance of Federal relationships to local conduct of education has the Federal government departed so far from the spirit of American institutions. The Committee thinks that in recommending Federal aid for education throughout the United States it would indeed be delinquent if it did not recommend first of all that the Federal government set its own house in order."

My only purpose in presenting the seamy side of Washington is to disillusion the millions of our people who believe that the Federal government is better than state and local governments; that the badge worn by the bureaucrat of Washington makes him wiser, less selfish, more far-visioned than the public officials whom you elect back home to run the affairs of your own community.

This record of Washington is a Stop, Look and Listen sign to everyone who is tempted to abandon state rights, home rule, and local responsibility for the doubtful blessings of Federalism.

When you are requested by Federal officials, whose salaries are paid by taxes taken from your

own pocket, to hand over your destinies to them, it would be well to reflect upon the parable of the man in olden times who was advised to remove the beam in his own eye before he undertook to remove the mote from the eye of his neighbor.

WHY PREMATURE OLD AGE?

Unless we welcome death as a remedy to terminate worries or suffering, the vast majority of us begin to look around seeking ways and means to live longer after we reach the age of 50 or 60. Obviously, our moments of pleasure and happiness have exceeded those of sorrow and misery allotted to us by Providence. Just as mariners shun rocks and shallow waters, many old men and women bend their steps away from the chilling river where Charon waits as they might draw away from a pestilential city. Realizing that they "once departed may return no more," aging men search for a way to carry on a little longer, as ancient alchemists did when they tried to find ingredients for an Elixir of Life, and when Ponce de Leon sought the Fountain of Youth. They derive no pleasure from reading the poet's allusion to death when he says, "Ourselves must we beneath the couch of earth descend; ourselves to make a couch for whom?" As they grow older they find new dreams and fancies in life, or their affection for friends and beloved relatives increases. Perhaps on many previous occasions they would have welcomed death, but now they wish to prolong their days—their earthly sojourn.

What is old age, and what do we mean by senescence, senility and senectitude? When Cicero undertakes to point out that although bodily strength of illustrious and venerable Romans was feeble, they carried on concerns of life by the mind, he alludes to the Latin senex when he says, "Now, unless those faculties existed in old men, our ancestors would never have called the supreme council by the name of senate." Semnos was the Greek word for revered, honored, grave, majestic, and senex found its origin in semnos. During the first century an aged person or a person advanced in years was counted from the latter half of the fortieth year onward. George said that senex is a person over 60 years of age, although senex was also sometimes used hyperbolically of persons from 45 to 60. Plautus (B. C. 184) says: "qua senex tabescit dies," i. e., far advanced, drawing to a close. When Hannibal discussed terms of peace with Scipio and said, "for I am returning to that country an old man which I left a boy," he was then not yet 50 years of age. In Josephus we see this: "Now I have for witnesses to what I have said, all those that have written Antiquities, both among the Greeks and barbarians; for even Manetho who wrote the Egyptian History, and Berosus who collected the Chaldean Monuments . . . and those who composed the Phoenician History, agree to what I here say . . . that the ancients lived a thousand years." He also says that Noah lived 950 years, and Moses died at the age of 120. During the time of Josephus it is probable that men did not live as long, for he writes, ". . . and with the few years which we now live."

Pliny tells about the ages of several men who lived in ancient times, and he mentions Xenophon who "gives to a king of the island of Lutmii 600 years, and then as though in that instance he had lied too sparingly, to his son 800." Continuing he says that all the statements relating to great ages of men "have originated in a want of acquaintance with the accurate measurement of time. For some nations reckon the summer as one year, and the winter as another; others again, consider each of the four seasons a year. . . . Others, such as the Egyptians, calculate by the moon, and hence it is that some individuals among them are said to have lived as many as a thousand years." He hastens to proceed, however, and tell us ". . . what is admitted to be true. It is pretty certain," he writes, "that Arganthonius of Gades reigned 80 years . . . Gorgias, the Sicilian, lived 108 . . . Perperna lived 98 years . . . Terentia, the wife of Cicero, lived 103 years, and Clodia 115 . . . we are informed by Mutianus that on the peak of Mount Tmolus . . . the people live 150 years, and T. Fullonius, of Bononia, was set down as of the same age in the registration which took place under the censorship of Claudius Caesar." From this account of Pliny it appears that people lived about as long during the first century in the Roman Empire, with the exception of those on Mount Tmolus, as they do today throughout most of the world.

Even after a careful review of ancient literature it is difficult to determine whether men

might have lived to great ages if they had been spared the rigors of war and the fate of soldiers. When we are reminded that the bodies of myriads of men and women have enriched the soil of all lands since the beginning of time, it is reasonable to believe that many might have lived several hundred years had not nearly all devoted their lives to warfare. Biblical references to age are somewhat contradictory, too, and they fail to explain certain disputed questions. In the tenth verse of the 89th Psalm Moses said, "Our years shall be considered as a spider: the days of our years in them are threescore and ten years." And Genesis has this: "And God said: My spirit shall not remain in man forever, because he is flesh, and his days shall be a hundred and twenty years." Many accept threescore years and ten as the normal duration of life today, and yet when these lines were first written nations destroyed other nations with as much savagery and ferociousness as they have done during all subsequent ages. Perhaps countless numbers of them might have lived several hundred years had they not been killed in war. It is clear that literature does not reveal any satisfactory definition of senescence that all are willing to accept. Again, it appears reasonably clear that millions of persons in nearly every age have believed that men should live longer if they attained great ages in the beginning. Nor is this all, for it seems natural for men to wonder why animals, such as the horse and cow, live as long today as they did in the beginning. If this is true then it can be said at once that the shortness of human life and the most of human ills can be attributed to the faculty of reason.

Heredity, nutrition and environment are, perhaps, the chief causative factors in premature old age. The majority of old persons had long-lived parents, grandparents, brothers and sisters. But there is a long list of other factors such as the rush and hurry of present-day civilization, the strain and stress of business worries, overeating, intemperance and uncontrolled emotions. Almost all very old persons have lived quiet lives under peaceful conditions, and it appears that many who become old prematurely have never been able to adjust themselves to so-called civilization. With respect to marriage numerous investigators are convinced that unmarried persons seldom enjoy longevity. One old theory about senility is that when magnesium begins to disappear from the human organism old age begins. It is the opinion of some scientific writers that the lack of magnesium may be due to the decreased ingestion of food containing it, or cells cannot store it in sufficient quantities as they did during the years of youth. Numerous workers have shown that when certain animals such as rats have been kept on a restricted diet they lived longer than those that were allowed to eat as much as they desired. Hair of well-fed rats finally became dry and coarse, whereas those that were fed but little had fine hair with a luster. Some contend that old age is not a disease, but a normal physiological period of life. Others say that there is no such thing as a natural death, and that careful investigation would reveal that the aging process or the wearing out of an individual is, to a greater or less extent, due to the effects of some intercurrent disease.

There are some who hold the endocrine glands responsible for premature old age or senescence, and it is believed that in numerous instances those who lead libidinous lives shorten their days. Immorality is another etiological factor added to the long list. A careful study of the works of scientific writers will reveal that the two foregoing statements are debatable, however. At the present time and perhaps in all ages there are and there have been many lascivious or immoral men who have not died prematurely. Perhaps Osler had this in mind when he said, "The world's history again shows that a very large proportion of evils can be traced to the sexagenarians—nearly all the mistakes politically and socially, all of the worst poems, most of the bad pictures, a majority of the bad novels, and not a few of the bad sermons and speeches, can be traced to sexagenarians." It is obvious to anyone who knows how Osler delighted in this type of dry humor that this must have been written while his fingers were crossed. One cannot be as liberal in judging the meaning of another writer who occupies a seat high in the halls of the literati, however. Shaw has been credited with saying that "all men are rascals after 40." This despite the fact that he rounded out 82 years a short time ago, and said "he wished people would forget his birthday."

Perhaps the length of life of a man is fixed at his birth; it depends upon the constitution he

is born with—the energy or vitality he has inherited from his parents and other generations before them. Involution begins when there is an embalance—when demands upon this reserve or store exceed natural processes of repair. Regression or involution is manifested by a wasting away of tissues, or they are altered and different from the tissues of youth. Premature old age or senescence is marked by atrophy of nerve cells and muscles. There is less organic matter in bones, and the marrow is denser. Walls of blood vessels lose their elasticity and their tone. As a rule the skin is drier and less elastic, and there are frequently marked changes in the endocrine glands, such as a diminution of secretions. If these changes can be discovered before they have made too much progress, some of them can be held in check or even prevented. Life expectancy has been increased during the past century, especially in infancy and childhood, but it is generally accepted that nothing can be done for anyone which will influence his length of life to any considerable extent. Moreover, in premature old age functional activity of organs is frequently impaired, and the heart appears to be affected the most. About half of all physicians in the United States over 45 years of age die of cardiovascular disease. Beginning at the age of from 45 to 50 the majority of men and women have a steady increase in systolic and diastolic pressure.

What are we going to do about it? Can we hinder, stop, or turn back old age? A large number of aged men and women who have led careful and methodical lives think that it can be done; that if others would follow similar self-imposed rules and regulations many more persons would live even beyond a hundred years. They think and say that if one wishes to live long he should direct his efforts toward that objective early in life, and never permit this fixed purpose to waver. On the contrary there are many male octogenarians and centenarians who contend that throughout the greater part of their lives they used tobacco, drank alcoholic beverages, and paid little attention to the choice of foods. All studies of longevity reveal that there are more old women than men; it seems that this fact should overbalance the evidence of old men who smoke and drink, for comparatively few aged women are addicted to those habits. It may be that. nearly all aged persons will agree on one dictum pertaining to the attainment of old age, namely: that whether we live long or die prematurely, depends mainly upon the manner in which each individual chooses to live.

Doubtless there are many old persons who accept the changes wrought by premature old age gracefully, and as something inevitable. Perhaps their concept of a shorter life is based on the same philosophy as the Timaeus of Plato, namely: ". . . but the artificers of our race, after thoroughly considering whether they had better make it more lasting and of worse condition, or shorter but of a more excellent character, were agreed that a shorter but better life was wholly preferable to one longer, but inferior." Cato's advice will be advantageous to those who wish to lengthen their span of life—he who began learning the Greek language at 80. He says, "We must make a stand against old age, and its faults must be atoned by activity; we must fight, as it were, against disease and in like manner against old age. Regard must be paid to health; moderate exercise must be adopted." And a little later on he continues, "For as I like a young man in whom there is something of the old, so I like an old man in whom there is something of the young; and he who follows this maxim, in body will be an old man, but he will never be an old man in mind." Thoughts of Horace flowed in the same channel when he wrote to Virgil: "Lay aside delay and the desire of gain; and mindful of the gloomy (funeral) flames, intermix, while you may, your grave studies with a little light gaiety."

Thucydides thinks that while growing old we should be like the state: ". . . and that the state if it remains quiet will be worn out on itself, like anything else, and its skill in everything grow dull; while by entering into contest it will continually gain fresh experience, and will find self-defence habitual to it, not in word, but rather in deed." On this particular point his philosophy was the same as that of Solon who, in his verses, boasted that he was "becoming an old man daily learning something new"; he knew that decay of intellectual powers is inhibited, provided study and application be kept up. There is a time in the affairs of nearly all of us who are pleased with life when we learn this. One of the most laudable attributes of aged persons is that equanimity of mind some of them exhibit during

their last years. They scorn the fast approaching end as Cicero did who said that "old men die as the exhausted fire goes out, spontaneously, without the exertion of any force; a state which to me indeed is so delightful that the nearer I approach to death, I seem . . . to be getting sight of land, and at length after a long voyage, to be just coming into harbor."

PAPERS FOR 1939 ANNUAL MEETING

The 1939 Annual Meeting of the Illnois State Medical Society will be held in Rockford on May 2, 3 and 4, the date having been changed on account of the meeting of the American Medical Association to be held in St. Louis during the week of May 15-19.

Owing to the fact that the meeting of this Society will be held the first week in May, it is necessary to make the usual arrangements one month earlier than is usually the case. All committees are now being selected and are ready to go to work so that the Rockford meeting next year will be an exceptionally fine meeting.

All members of the Illinois State Medical Society who desire to present papers in any of the sections are requested to get in touch with the proper section officer as early as possible, tell the subject you desire to discuss, send a short synopsis of the subject matter, and contact the proper officer of the section you are interested in, and we are listing same in this article.

Owing to the fact that the papers to be presented before each section must be limited in number, the officers of the sections are anxious to schedule only those papers which will be of general interest to all members, and they must necessarily be critical in making the selections.

OFFICERS OF SCIENTIFIC SECTIONS

Section on Medicine—Robert Keeton, *Chairman,* 8 South Michigan Ave., Chicago; E. M. Stevenson, *Secretary,* Bloomington, Illinois.

Section on Surgery—Darwin Kirby, *Chairman,* Champaign, Illinois; Frederick Christopher, *Secretary,* 2650 Ridge Ave., Evanston.

Section on Eye, Ear, Nose and Throat—S. J. Meyer, *Chairman,* 58 East Washington St., Chicago; Frank W. Broderick, *Secretary,* Sterling, Illinois.

Section on Public Health and Hygiene—F. S. Needham, *Chairman,* 124 South Marion St., Oak Park; L. E. Orr, *Secretary,* Springfield, Illinois.

Section on Radiology—Harry Magee, *Chairman,* Peoria, Illinois; Warren W. Furey, *Secretary,* 7830 Euclid Ave., Chicago.

Section on Pediatrics — Gerald Cline, *Chairman,* Bloomington, Illinois; Orville Barbour, *Secretary,* Peoria, Illinois.

Section on Obstetrics and Gynecology—W. T. Carlisle, *Chairman,* 122 South Michigan Ave., Chicago; W. A. Malcolm, *Secretary,* Peoria, Illinois.

A member of the Illinois State Medical Society who would like to present a paper before any of these sections should write to either the chairman or the secretary of the section in which he is interested; one of the officers resides in Cook County and the other in the down-state counties, and it is desirable for Chicago members to write to the Chicago section officer, while the down-state members should write to the down-state official in order that the papers may be fairly well divided between the two groups.

Each year, long after the scientific programs are made up for each section, letters are received from members of the Illinois State Medical Society asking for information relative to the presentation of a paper at the next annual meeting. It is therefore desirable that all physicians who desire to present a paper before any of these scientific sections should write to the proper section officer at once, sending your name and address, the title of the subject you desire to discuss, and an outline or synopsis of the subject matter of your paper. This will better enable those who are responsible for the development of the programs to make the proper selection for a well balanced program.

The preliminary program for the 1939 Annual Meeting in Rockford must be published in the March Illinois Medical Journal, and the official program will appear next month, which means that the officers of sections who are responsible for the development of the various programs must get their speakers within a relatively short time.

HOUSE OF DELEGATES COMMITTEE MEETS WITH INTERDEPARTMENTAL COMMITTEE

On October 30, the Committee of the House of Delegates of the American Medical Association met with the Interdepartmental Committee to Coordinate Health Welfare activities of the Government in Washington.

"In a joint interview, following the conference, by Dr. Irvin Abell and Miss Josephine Roche, it was pointed out that the conference had reached no definite conclusion or specific plans for cooperation, nor had there been any abandonment of specific positions taken by either group in relationship to the program. The representatives of the government again explained the detailed concept of the National Health Program. The representatives of the American Medical Association indicated the actions taken by the House of Delegates, which involved approval of the extension of public health service specifically related to the prevention of disease and the provision of hospitals and allied institutions and of government assistance for the care of the indigent when the need can be established. The medical representatives pointed out that in hospitalization and the care of the indigent the administration should be simple and placed in the hands of responsible public officials who would cooperate with local medical societies. The medical representatives again expressed opposition to compulsory sickness insurance and the fear of the fact that the insistence on such a system by the government would be "bureaucratic, costly, and political."

In a brief report on the conference, President Irvin Abell said:

"The reception accorded our committee was quiet friendly and the discussion evinced the same spirit on both sides. They were fruitful in bringing out a better understanding of opposing points of view and in focusing attention on the discrepancies in data and statistics on which such points of view are founded. While tentative agreement in principle, not in methods of application, was reached on four of the recommendations, the conference was stymied by the question of compulsory sickness insurance. The Interdepartmental Committee is to hold conferences with representatives of other groups, notably the American Public Health Association, the American Dental Association, the American Hospital Association and the American Nursing Association. It was suggested that our committee return at a later date for further conference presumably after the above named organizations, through their representatives, have had opportunity to express their views. If this invitation is accepted an early date was suggested, as the Interdepartmental Committee will prepare its report to be submitted to the President at the opening of the Congress, when its recommendations may be embodied in proposed legislation."

A CORRECTION

The article "THE EDUCATIONAL COMMITTEE: ITS ORIGIN AND WORK," which appeared in the November issue of the Illinois Medical Journal, contained the misstatement to the effect that about $1200.00 was collected by voluntary contribution to establish a sufficient working capital to show the possibility of an up-to-date progressive lay educational program. The amount mentioned, namely, $1200.00 was an error on the part of the printer, the statement should have read "that approximately $12000.00 was collected by voluntary subscription."

The Illinois Medical Journal in regular monthly issues beginning February, 1923, and through May, 1924, contained a Roll of Honor, that is, the issues mentioned contained a printed list of names of Doctors who contributed to a voluntary fund that made the setup and the ground work of the Educational Committee possible previous to the committee's activities being taken over and financed by the Illinois State Medical Society.

Since 1927, the Educational Committee has had as its secretary the genial and efficient Jean McArthur. Miss McArthur's supervision and direction of the activities of the committee has been a credit to herself as well as to the Illinois State Medical Society.

PUMP BLOOD THROUGH CORPSES

Pumping blood through dead bodies sounds pretty gruesome, but two St. Louis scientists, Drs. John Russell Smith and William Bryan Kountz of Washington University School of Medicine, have found it a valuable means of learning more about causes of high blood pressure and the way diseases affect various organs of the body.

High blood pressure probably has more than one cause, they learned from the cadaver studies. In these studies, specially prepared animal blood was run into the bodies by an artificial heart connected to the large artery in the chest.

Decrease in blood supply to the kidneys such as occurs in nephritis is sometimes responsible for high blood pressure, they found. Disturbance of salt balance of the blood tends to make the blood vessels more sensitive to the hormones which are normally present in the blood, and this also may be responsible for elevated blood pressures.—*Science News-Letter.*

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
W. M. Hartman, M. D.
J. R. Neal, M. D.
I. H. Neece, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

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Address all letters and communications to the Chairman.

The realignment of forces in the next Congress should not delude the medical profession into a sense of false security as to any less danger of changes in the manner of conducting the practice of medicine receiving consideration. Those of you who have read the organization section of the *Journal of the American Medical Association* the past month know that the Grand Jury investigation of the American Medical Association in the District of Columbia courts continues with the calling of some of the official family of the A. M. A. The outcome is, of course, problematical, but the inevitable conclusion is that the medical profession is in for a rough time.

At the last meeting of the Council of the Illinois State Medical Society, it was evident that the activities of the Public Health Service in Illinois were ready for a definite increase. A new activity, the Illinois State Pneumonia Control Program, was presented with a chairman. Dr. Lindberg announced that they were beginning work and that they were examining laboratories as to their facilities and ability to type the pneumococcus and would present to the Council and the profession of the State a complete program of activity in the near future. This will probably include typing of sputum and the furnishing of free serum to those suffering from pneumonia. In addition the activities of the Committee on Maternal Welfare were increased and the chairman of the Committee, Dr. Frederick Falls of the University of Illinois, presented for consideration a plan for improvement of the obstetrical department of the hospitals of Illinois. Definite action on this was delayed for a month until all the members of the Council had sufficient time to study the subject and talk over its application with the local hospital authorities.

Recently, Dr. Nathan B. VanEtten, former Speaker of the House of Delegates of the American Medical Association, delivered an address at a meeting of the Kings County Medical Society in Brooklyn. This speech was published under the title, "The Doctor at the Crossroads," in the November 1 issue of *"Vital Speeches of the Day."* This is one of the best articles on the current problems of the medical profession to come to the attention of the writer of this article and he suggests that every man who has the opportunity read this article with great care and then pass it on to some other member of the profession. Reprints are available through the Medical Relations Bureau of the Medical Society of the State of New York, New York City.

Another article giving the viewpoint of the medical profession is one by William Allen Pusey, former President of the Americin Medical Association, which appeared in the November issue of *America's Future,* a new periodical devoted to maintaining the present philosophy of Government. Probably every member of the medical profession received an introductory copy of this magazine and it is to be hoped that he took time to read the same and then placed it on the table in his waiting room, where it will be available to the public. We need to present this type of article to the public, and coming from the lay press, it is received much more favorably than when it is in a medical journal.

Prior to the recent election, practically every issue of the *United States News* coming out of Washington insisted that a real effort would be made to pass some type of Socialized Medicine at the coming Congress. It even went so far as to outline the main points of the proposed bill and commented that it seemed probable that it would pass either in its entirety or in part. To the writer, this paper has seemed very fair in the past in its attitude on this subject, and it has been quoted in this column many times in the past year. However, it seems that it is quite radical in its ideas the past month and many members of the profession in Illinois have called attention to the apparent inaccuracies of some

of their statements. We must be impartial and admit that at times we have disagreed with their statements, but in most instances they were merely giving opinions and certainly they are entitled to their own opinion and in addition they should be in position to know the atmosphere of official Washington much better than those of us in the prairie state of Illinois. We shall continue to read their articles on Medicine although we at times shall disagree with them. We hope that many of the profession of Illinois will continued to do the same.

We hope that many members of the profession have taken the time to write the Senator-Elect from Illinois, Scott Lucas of Havana, to congratulate him both on his election and his definite stand on the subject of State Medicine. Prior to election he admitted that he was surprised at the interest of the medical profession in the question and would help them. We should continue our interest and contact him at every opportunity. We should do the same thing with the members of Congress from our District. Also the two Congress-men-at-Large, John Martin of Salem, Illinois, and T. V. Smith of Chicago. Regardless of our personal political affiliations, these men are our representatives in Congress and they should and will follow the desires of the people of Illinois provided the people of Illinois let them know what they, the people, want. In medical matters, the medical profession should guide their activities.

Fortune, that aristocrat of periodicals, recently had an article on the American Medical Association which while not exactly favorable to the medical profession, should be read by that portion of the profession who can afford to subscribe to such a magazine, or who have the same available at a club. It is a good article, even though the conclusions arrived at may be at variance with that of the majority of the readers in the medical profession. Anyone interested in the economic problems of medicine will continue to find interesting reading in many of the current lay periodicals. Some may irritate a little but it is well to read up on both sides of controversial questions, particularly those affecting the medical profession so intimately.

E. S. Hamilton,

Chairman Committee on Medical Economics.

SOCIALIZED MEDICINE AND THE FEDERAL FARM HEALTH PROGRAM

Vigorous protests of the American Medical Association against socialized medicine have not affected the federal government's responsibility in caring for the health of the nation's farmers.

Low-income farm families of twelve states are now participating in medical aid programs promoted by the Farm Security Administration. Plans are being made to extend this program to several other states.

The government justifies its action by claiming that rehabilitation of low-income farm families and making them self-supporting is impossible unless adequate and proper medical attention is given them.

According to Dr. W. W. Alexander, Administrator, "Quite aside from any humanitarian purposes, the Farm Security Administration has found, as a lending agency, that a family in good health is a better credit risk than a family in bad health. It has developed plans for medical care because it has found that good health is a necessary part of a family's rehabilitation."

PROGRAM STARTED NOV. 1, IN DAKOTAS

On November 1, the Administration expected to begin operations in North and South Dakota. Approximately 77,000 families of those two states will be eligible to participate in the program. The cost will be $2 per month per family, and the F.S.A. is prepared to loan $16 to each family signing up. This amount will provide care for the remainder of the fiscal year. The plan is open only to those families who are now being, or have been, aided by the Farm Security Administration.

THE PRINCIPLE OF INSURANCE

At the special session of the house of delegates of the American Medical Association, held in Chicago, September, 1938, the organization section made the following recommendation which was approved.

The American Medical Association has never opposed the principle of insurance. An organization such as ours is in itself of the nature of a cooperative group in which individuals have banded together and by their individual contributions have made possible great accomplishments which individually they could not have

attained. It is not the principle of insurance that is opposed by American medicine. The principle which we do oppose is political administration and manipulation of the insurance organization, devotion of a considerable portion of the funds thus derived to the payment of great numbers of employees not directly concerned with the service but intimately concerned with the maintenance of a political organization, and expansion of such organizations to wield greater and greater power in the affairs of the nation.

The American Medical Association has not opposed insurance against the costs of sickness, of disability, of unemployment, of old age or of death. It does oppose any interference by any outside agency — commercial, governmental or otherwise—into the relationship between doctor and patient which is fundamental in good medical care.

Basically, the doctors of America primarily interested only in providing or co-operating with a system of sickness service free from political manipulation.

The problem of the low wage group is not medical, but is one hundred per cent. economic. We do not deny that the man with an income of less than one thousand dollars per year cannot pay for superior medical care. Neither can he buy as many diamonds or as many suits of clothes as his more prosperous neighbor, neither can he ride in a Rolls Royce or enjoy annual trips abroad.

Neither does the low wage earner expect to have all the super luxuries. But he is entitled to a decent wage which would enable him to buy better clothes, better housing and abundance of food and financial ability to support and educate his children.

SOME RECOMMENDATIONS FOR A BENEVOLENCE FUND

1. That the Woman's Auxiliary to the Illinois State Medical Society do forthwith establish a Benevolence Fund to aid the needy Doctor and his wife, and set aside an initial sum of dollars for that purpose.

2. That plans be formulated and steps be taken to raise a sum of money annually to be added to this fund.

3. That whenever possible, contributions to this fund by individuals be encouraged.

4. That application for assistance from this Benevolence Fund can be made through the local Medical Society or its Auxiliary, who will forward the same to the Benevolence Committee.

5. That this fund be administered by the Woman's Auxiliary to the Illinois State Medical Society, through a standing committee consisting of three members, elected by the Auxiliary Board, from the membership of the State Auxiliary. One member shall serve for one year, one for two years, and one for three years; and thereafter one member to be elected each year for a term of three years.

6. That is shall be the duty of this committee to receive and act upon each application for aid, in the order received, and to render such aid as the circumstances warrant.

7. That the Illinois State Medical Society be notified of the existence of this Benevolence Fund, and that an announcement to this effect be made at a meeting of every County Medical Society and its Auxiliary.

Correspondence

Springfield, November 23, 1938.

FREE SULFANILAMIDE

The State Department of Public Health has announced that sulfanilamide is available free on requests of physicians for the treatment of patients suffering from gonorrhea. The only requirement is that the request be accompanied by a report of the cases for which the drug is desired. Cases may be reported by either name or code number. Any physician in Illinois may obtain sulfanilamide sufficient to treat any and all gonorrhea patients under his care who in the physician's judgment will be benefited thereby. The drug is distributed in vials of 100 tablets of 5 grains each.

It is recognized that to be effective, sulfanilamide must be used therapeutically at the proper time, in appropriate dosage and in properly selected cases. It appears, for example, that sulfanilamide is not of value and may even be injurious when used during the early stages of infection, interfering with natural reaction to the infection. Apparently this drug is valuable only as an adjunct to reaction when that has reached a certain stage of development. Sulfanilamide has no value as a prophylactic, a fact that cannot be too strongly emphasized.

When properly timed and used, sulfanilamide seems to be of sufficieent value in the treatment of gonorrhea to justify its distribution as a public health measure. The Department has, therefore, stocked a supply and will be glad to provide the drug in the quantity needed to physicians of the State who so desire and who report the cases to be treated with the sulfanilamide requested.

A. C. Baxter, M. D.,
Acting State Health Director.

RECOVERY

Association of Former Patients
Illinois Psychiatric Institute
Chicago, Illinois

Chicago, Ill., October 31, 1938.

To the Editor:

May I ask you to enter the following notice in the Illinois Medical Journal:

"The Association of Former Patients of the Psychiatric Institute of the University of Illinois called a public meeting Thursday, October 27, to which representatives of the leading civic organizations were invited. The meeting took place at the University of Illinois College of Medicine and was addressed by representatives of the University and of the State Department of Public Welfare, and of various civic organizations including the Illinois Society for Mental Hygiene. In addition one male and one female patient who had recovered from shock treatment, and the father of a patient made speeches. More than 500 patients, relative, and friends attended. The object of the meeting was to solicit public support for legislative changes in commitment procedures.

"The Association of Former Patients was formed in November, 1937, and comprises over 100 patients discharged after receiving shock treatment. In addition it has over 200 Associate Members composed of the relatives of the patients. Its objective is to fight the stigma attached to mental disease. With this aim in view it contemplates legislative action to rid the mental patient and his family of the disgrace of the court record."

A. A. Low, M.D.,
Assistant Director, Psychiatric Institute President, Association of Former Patients.

SINULITH IN MAXILLARY SINUS

DeKalb, Illinois, Nov. 10, 1938.

To the Editor:

History:

Patient—E. W., Married Woman, age 62.

About fifteen years ago had growth removed from both nostrils by a physician in another city. Soon after the operation she developed a fetid discharge from left nostril with pains in top of head and dizzy spells. Had teeth removed three years ago for pyorrhoea. Blood pressure 175/100. Other physical findings normal except for nasal condition.

Findings:

There is foul smelling pus in middle meatus of left nostril and trans-illumination shows shadow over left maxillary sinus. October 7th, 1938 the intra-nasal window operation was performed on sinus and the stones were found, which are being passed around.

I have had many cases of rhinoliths, but this is the first case of a stone in the sinus I have ever had or heard of.

A guess at the etiology would be that asmall fragment of bone was dropped into the sinus at the time of the operation fifteen years ago and that the limestone salts had been deposited on this. The condition had existed thriteen years before the teeth were removed. The pains in her head and dizziness have subsided.

Clifford E. Smith, M. D.,
De Kalb, Illinois.

Presented at Staff Meeting, Glidden Memorial Hospital, De Kalb, Ill., November 1, 1938.

POLITICAL ANTITOXIN

Oak Park, Illinois, Oct. 4, 1938.

To the Editor:

A new illegitimate baby was born to the Department of Justice in Washington and christened with a modern name, "Socialized Medicine." To justify such an act it was interpreted to have a function," to lower the cost and improve medical care to the neglected third of our nation, and so for the past four months the topics of medical care and its cost have held the center of attraction in all the newspapers and magazines as well as the misinformed public in general. The representative to the Department of Justice in Washington did not deem it necessary to consult with the medical profession or its representatives

who are vitally interested and best informed as to the actual facts in medical economics and, if necessary, to devise means and ways for the proper care and lower cost, but the Department proceeded with attacks and threats against the medical profession and their representatives of an alleged illegal activity against cooperative groups attempting to reduce the cost of medical care irrespective as to its qualifications.

Are we living in an age of "Conviction without trial," or are we following the principles of dictatorship across the sea? From time immemorial the medical profession attempted to live up to its principles irrespective of compensation in treating the "poor" and the "rich" alike. Many books have been written by physicians, as well as laymen to substantiate these facts and it needs no other proof unless for the sake of argument. Why not attack the economic question which is the greatest factor for most of the poor being sick. It is a known fact that sickness prevails amongst the poor to a greater degree than amongst the well-to-do for which statistics are not necessary, if so, why not attack those that have a lot to offer without giving instead of attacking those who have always contributed to the welfare of our nation. Why evade the cause and its issues and mislead the American public? The facts in the case are that about a year ago 430 doctors signed a petition for socialized medicine. They are men of high standing in the medical profession and their communities, and the greatest number of them are attached to clinics and medical schools and are not in active practice. These medical schools have enjoyed glory and reputation for many years in the past but have lost to a great extent the financial assistance in the years of the depression and, as a result, their teaching staffs have been reduced to a minimum with lower salaries to those that have been retained, with the possibilities of greater difficulties in the future, and in order to survive it became necessary for time to find a solution for immediate help. Knowing that the federal government has become the Santa Claus to the forgotten people, they convinced some "politicians" that one-third of the population is not receiving adequate medical care and from a humane standpoint it should be the duty of our government to step in and take charge of this deplorable situation and thereby set itself up as an agency with schools and clinics to further better medical care at a lower cost in order to survive. The politician discovered in this newborn, a ray of hope to popularize themselves with the general public and took advantage of this opportunity as it presented itself, and proceeded to attack the medical profession to gain their political objective. As a result of these attacks the medical profession who are honest and sincere, proceeded to gather data and information on the care and cost of medical aid to our entire population. And 100,000 sincere physicians and poor *POLITICIANS* are side-tracked as to the real issues in this controversy and thereby are permitting our politicians to go ahead with their plans undisturbed, and if, and when, the time will arrive when the medical profession will have all their facts tabulated to prove that the people of this country are receiving the best medical care on this universe, the politician will have gained his objective and the doctor will be the forgotten man.

For the past twenty-five years I have been politically inclined, as a hobby only, and have gained considerable experience as to the etiology and treatment of political ills, and it is for this reason, that I offer what I think is a solution, or as I call it, a political antitoxin to stop such political nuisance.

Robert Louis Stevenson said, "The physician is the flower of our civilization." Evidence indicates that the physician is still maintaining his traditional place as a community leader and, as such, he serves his community, state and nation. He is interested in their welfare and uses his influence which is, perhaps, greater than realized upon the right side of the question. Therefore, I propose that if physicians take it upon themselves as leaders and proceed to explain to each and every patient that he contacts or treats the detriment and abuses that are connected with state or socialized medicine and, with that, presents him a petition for his signature directed to our federal government stating that they are opposed to that type of practice, and all these signed petitions to be forwarded to the representatives of the American Medical Association, and they in turn will deliver them in person to our federal government in Washington which will express the sentiment of our American people. This is a whip which the politicians fear the most. For, an opinion of ten million citizens which could easily be obtained by the medi-

cal profession within a few months with a little concentrated effort would solve the entire political nuisance of state medicine, not only for the present but for many years to come. The politicians fear public opinion for it is the only factor that keeps them In or Out of office.

At a recent lecture by Mrs. Franklin Delano Roosevelt, the wife of our President, who is well informed, stated, "The government acts according to public sentiment." Individuals may create such sentiment by expressing their viewpoints and opinions to their friends and their neighbors and within a period of time that sentiment becomes national and will stop any legislation which may be detrimental to its citizens. To substantiate the truth of this statement I had an opportunity of acting as secretary of a local group of physicians in the town in which I reside consisting of twenty-five members. During that period when the Sheppard-Towner bill came up in Congress for its passage, we, as a medical group, wired our congressman, at that time, John J. Gorman, to vote against that bill and within a few days he replied that he would use his own judgment when the bill presented itself. This small medical group went on record to oppose him in the fall election which was but a short time away and fortunately was lost by a small margin of approximately fifty votes which brings out my point of view that if the medical profession unite in a similar effort we could control the politician and his political nuisance who are seeking to further their own glory at the expense of the general public.

JOHN PETERS, M. D.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

Dear Auxiliary Member:

In response to a request from your State Publicity Chairman, Mrs. C. Otis Smith, that a message come to you from your President-Elect, I send you greetings, and a wish that you may have renewed Auxiliary spirit, and endeavor, for the coming year.

I have recently been appointed by the National Chairman of Program, as Regional Chairman of Program, for the North Central Region which entails the supervision of ten states, and I am grateful for this opportunity to urge my own Illinois Auxiliary Members to cooperate with your National, Regional, and State Officers, in carrying out the Program of Self-Education that has been launched by the National Auxiliary this year.

Our first duty is to become informed along the health lines so that we may give the laity a more intelligent conception of health and healthful living, thus only, can we hope to be an ally of the Medical Profession, and at the same time, serve the best interest of the public. Will you not appreciate the great privilege that is yours, that of being an Auxiliary Member? The informed member is ever the interested member. We cannot be enthusiastic about a subject with which we are not familiar. Pledge yourself to become an informed member this year, and plan to have programs of an educational nature exclusively in your Auxiliaries.

Material for self-educational programs will be sent to you by writing to your State Chairman of Program, Mrs. C. C. Kane, 8200 State Street, E. St. Louis, Ill., or myself.

Always devotedly yours in Auxiliary endeavor,
(Mrs. Charles Crain) Anne Winning.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

To County Program Chairman and Auxiliary Members:

As State Program Chairman I am sending you this word of greeting, wishing each Auxiliary a very successful year.

Our slogan for this year is "Be Informed to Inform Others." We should as Auxiliary members "Be Informed" on all problems that confront our Doctors, and the place to get correct information is our own Auxiliary meetings, so plan to attend faithfully this year.

County Program Chairman!!! It is up to you to plan your programs covering subjects that will help your members to "Be Informed." The Suggested Program that was sent to all County Program Chairmen and County Presidents, contains suggestions for planning your meetings and I hope you will find it helpful.

I believe your Auxiliary members would be interested in hearing the message from Dr. Chas. Skaggs (Chairman of the Illinois State Advisory Committee) that was enclosed with the Suggested Program, I would recommend his message read at your opening meeting.

If I can assist in planning your programs please write me.

Your State Program Chairman,
Nevada Kane (Mrs. C. C.),
8200 tSate Street,
E. St. Louis, Ill.

IOWA AND ILLINOIS CENTRAL DISTRICT MEDICAL ASSOCIATION

On Friday evening, December 16, there will be held the mid-winter meeting of the Iowa and Illinois Central District Medical Association, at the Le Claire Hotel in Moline, Illinois.

A ten-minute paper will be given by Dr. L. A. Dondanville of Moline, Illinois, on "Preliminary Treatment of Traumatic Cases."

Dr. Sumner L. Koch of Chicago, Illinois, will deliver an address, "Some Surgical Principles Involved in Treatment of Injuries of the Hand." The discussion will be opened by Dr. W. C. Goenne of Davenport, Iowa, followed by E. B. Neff, M. D., of Moline, Illinois.

Dr. John P. Peters of New Haven, Connecticut, will deliver an address on the following:

I. Nephritis.

II. Medical Economics.

Discussion will be opened by Francis Cenedello of Moline; J. I. Marker, Davenport. Dinner will be served at 6 P. M.

FOURTH ANNUAL POSTGRADUATE INSTITUTE

The Philadelphia County Medical Society desires to announce formally, the completion of its scientific program for the

FOURTH ANNUAL POSTGRADUATE INSTSTUTE

to be held in the Bellevue-Stratford Hotel, Philadelphia, during the week beginning March 13th, 1939. The subjects to be considered are those embraced by the terms Blood Dyscrasias and Metabolic Disorders. These will be further subdivided for convenience in instruction into eighty-six clinical lectures, with open forum discussion for each topic, delivered by as many individual specialists of national distinction.

The pre-eminent position of Philadelphia as a medical center in the past has been justified by its large array of first class hospitals and contributory institutions, and that conservative scholastic atmosphere so essential to careful and dependable research. Despite the development of medical centers in other areas, Philadelphia has continued to maintain its enviable position and it has been the desire of the Philadelphia County Medical Society to release to its own members and to those of the medical profession in general, the results of the labors so diligently conducted within the walls of the city's several medical schools.

The tremendous advances in the medical sciences since the World War have increased the demands of the lay public for medical information. The development of the channels for communication have familiarized the public with medical conditions and terms to such an extent that the physician must keep himself at least informed if not intensely educated concerning the most recent work in the medical field. He cannot conduct his practice along the older lines without continuing his education in the new.

The Postgraduate Institute aims to fill this need and the participants may be assured that they will unquestionably profit by the program to be presented.

Address inquiries to The Philadelphia County Medical Society, Twenty-first and Spruce Streets, Philadelphia.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination and review of case histories for Group B candidates will be held in various cities of the United States and Canada on Saturday, February 4, 1939, at 2:00 P. M. Application for admission to this examination must be filed on an official application form in the office of the Secretary at least sixty days prior to this date, (or before December 4, 1938).

The general oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire Board, meeting in St. Louis, Missouri, on May 15 and 16, 1939, immediately prior to the annual meeting of the American Medical Association. Application for admission to Group A examinations must be on file in the Secretary's Office by March 15, 1939.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Penna.

AMERICAN BOARD OF OBSTETRICS AND GENECOLOGY

The general oral, clinical and pathological examinations for all candidates, Part II Examinations (Groups A and B), will be conducted by the entire board, meeting in St. Louis, Missouri, on May 15 and 16, 1939, immediately prior to the annual meeting of the American Medical Association. Notice of time and place of these examinations will be forwarded to all candidates well in advance of the examination dates.

Candidates for reexamination must request such reexamination by writing the Secretary's Office before the following dates: Part I—January 1, 1939; Part II —April 1, 1939. Candidates who are required to take reexaminations must do so before the expiration of three years from the date of their first examination.

Application for admission to Group A, May 1939, examinations must be on file in the Secretary's Office by March 15, 1939.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

PASTEUR INSTITUTE IS FIFTY YEARS OLD

In the rue Dutot, on November 14, 1888, as the result of an international subscription to which many foreign sovereigns, scientists and philanthropists had contributed, the Pasteur Institute was opened. The 50th anniversary will be celebrated on December 27th, Pasteur's birthday.

The purpose of the institution was to treat hydrophobia by the Pasteur method, to prepare serotherapic inoculation liquids, and to perfect biologic chemistry. The great Pasteur Institute in the rue du Docteur-Roux in Paris today is a vast organization which has influenced medicine throughout the world, and which has "branches" in many countries—Dakar, Tangier, Tunis. . .

Pasteur himself never worked at the Institute which bears his name. His laboratories were at the *Ecole Normale* in the rue d'Ulm, and when he was brought to the new Institute he was already paralyzed. However, the medical and scientific pilgrims may make their way to the little chapel of the Institute where his body reposes, and in the hall which leads to the chapel they will find the busts of his aids and successors.

One of the most important sections of the Pasteur Institute today is certainly that devoted to the B.C.G.: the Calmette Guérin Bacillus. Millions of children in France alone have now been vaccinated with this serum, and the Pasteur Institute has a card catalog of them all kept up to date, so that the eventual developments may be noted.

To take one on a detailed visit to the vast establishment is beyond the means of a short article, but it would take the investigator through laboratories devoted to the study of the ferments, in beer, cheese, yeast, wine, etc., to the model hospital at the foot of the garden. Although only infectious cases are treated here, there has never been contagion: each case is placed in an isolated cabin, and before passing from one to another, the doctor changes blouse and gloves.

The present director of the Pasteur Institute is Dr. Louis Martin, successor to Dr. Roux, one of the greatest of modern French scientists, who is buried in the Court of Honor of the Institute.

Antidiptheric Vaccination now obligatory in France. It is to be noted that it was only on June 2, 1938 that it became compulsory in France for all children to be vaccinated against diphtheria. The serum used is that perfected by Dr. Roux, late director of the Pasteur Institute, and known by his name.

JUNIOR MEDICAL OFFICER (ROTATING INTERNESHIP), $2,000 A YEAR

JUNIOR MEDICAL OFFICER (PSYCHIATRIC RESIDENT), $2,000 A YEAR

ST. ELIZABETH'S HOSPITAL, DEPARTMENT OF THE INTERIOR, WASHINGTON, D. C.

APPLICATIONS MUST BE ON FILE WITH THE UNITED STATES CIVIL SERVICE COMMISSION AT WASHINGTON, D. C., NOT LATER THAN THE FOLLOWING DATES—

(a) December 13, 1938, if received from States other than those named in (b), below.

(b) December 16, 1938, if received from the following States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.

The United States Civil Service Commission announces open competitive examination for the positions named above. Vacancies in these positions in Washington, D. C., and vacancies in positions requiring similar qualifications in Washington, D. C., will be filled from these examinations, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion. The present entrance salaries are as stated above. If permissive legislation already proposed is passed by Congress, however, the salary of internes (Type A) may be $600 a year. The salary named is in each case subject to a deduction of 3½ percent toward a retirement annuity. A further deduction of $60 a year will be made for quarters, laundry, and medical attention. Salaries are not paid internes for the 3-month period of affiliation. All internes are required to live in the hospital, and there are no quarters for the family of married internes.

INTERNSHIP.—*Junior Medical Officer (Rotating Interneship).*—The interneship consist of a 2-year rotating service of 4 months of surgery, 4 months of acute medical service, 4 months of chronic medical service, 6 weeks of obstretics (affiliation), 6 weeks of pediatrics (affiliation), 3 months of general laboratory work, and 6 months of psychiatry (American Medical Association Classification 1, Type A).

Junior Medical Officer (Psychiatric Resident).—A postgraduate interneship of 1 year in psychiatry (American Medical Association Classification 2, Type B) is offered to graduates in medicine who have already served an accredited interneship.

CAUTION.—Applicants should state definitely in their applications whether they are applying for the position of Junior Medical Officer (Rotating Interneship) or for the position of Junior Medical Officer (Psychiatric Resident).

PROBABLE VACANCIES.—It is expected that there will be two vacancies July 1, 1939, and two vacancies October 1, 1939, for Type A interneship; and in the fiscal year beginning July 1, 1939, that there will be approximately five vacancies for psychiatric residents (Type B).

DUTIES.—*Junior Medical Officer (Rotating Interneship).*—Under immediate supervision, to admit patients, take histories, make physical examinations, and record findings; to make ward rounds of inspection, note charts, and record observations; to prescribe for minor ailments or for acute emergency cases; to dispense medicine in emergencies; to perform minor surgical operations; to assist at major operations and in redressing; to administer anaesthetics; to make routine laboratory tests and analyses; to assist at out-patient clinics in dressing, and in administering vaccines; to keep records, make up case histories; and to compile statistics requiring medical training.

Junior Medical Officer (Psychiatric Resident).—To take histories; to make physical and mental examinations and to record the findings; to make rounds of inspection; to make notes; to prescribe for and treat minor ailments; to answer correspondence relative to patients; and to assist the chief of the service to which assigned in all the administrative and professional duties of the service.

BASIS OF RATING.—Competitors will not be required to report for examination at any place, but will be rated on the extent of their education and on the extent and quality of their experience and fitness which are relevant to the duties of the position applied for, on a scale of 100, such ratings being based upon com-

petitors' sworn statements in their applications and upon corroborative evidence.

Statements concerning qualifications will be verified by the Commission; exaggeration or misstatement will be cause for disqualification.

Proof of Graduation.—The names of fourth-year students will not be certified for appointment until a certificate of graduation as B. M. or M. D. is filed. The names of persons who are now serving, but who have not yet completed, the interneship required under the examination for Junior Medical Officer (Psychiatric Resident) will not be certified for appointment until a certificate of the completion of the interneship is filed.

Certification.—Certification to fill vacancies in these positions will be made of the highest eligibles on the appropriate register from the entire country who have not expressed unwillingness to accept appointment where the vacancy exists. The department or office requesting certification of eligibles has the legal right to specify the sex desired.

Fingerprints.—Fingerprints will be taken of all persons appointed from these examinations.

Application Forms.—The necessary forms may be obtained from the *Secretary, Board of United States Civil Service Examiners, at any first-class post office,* from the United States Civil Service Commission, Washington, D. C., or from the *United States Civil Service district office* at any of the cities given below (the title of the examination desired should be stated):

Atlanta, Ga., New Post Office Building.
Boston, Mass., Post Office and Courthouse Building.
Chicago, Ill., New Post Office Building.
Cincinnati, Ohio, Post Office Building.
Denver, Colo., Post Office Building.
New Orleans, La., Customhouse.
New York, N. Y., Federal Building, Christopher Street.
Philadelphia, Pa., Tenth Floor, Gimbel Building.
Seattle, Wash., Federal Office Building.
St. Louis, Mo., New Federal Building.
St. Paul, Minn., New Post Office Building.
San Francisco, Calif., Federal Office Building.
Honolulu, T. H., Federal Building.

Balboa Heights, Canal Zone, *Secretary, Board of United States Civil Service Examiners.*

San Juan, P. R., *Chairman, Puerto Rican Civil Service Commission.*

The exact title of the examination desired, as given at the head of this announcement, should be stated in the application form.

MISSISSIPPI VALLEY MEDICAL SOCIETY

The fifth annual meeting of the Mississippi Valley Medical Society will be held in the new $500,000.00 Municipal Auditorium (to be ready June 1, 1939) at Burlington, Iowa, September 27, 28, 29, 1939. The magnificent new Auditorium at Burlington, only two blocks from the headquarters hotel, will afford the Society the largest and finest meeting place it has ever had. A wonderful Exhibit Hall is being planned which will afford both technical and scientific exhibitors, the largest floor space in the history of the Society.

The Society's officers for 1939 (elected Nov. 20, 1938) are as follows:

President, M. Pinson Neal, M. D., Columbia, Mo. (Elected 1937.)

President-Elect, John T. Hanna, M. D., Burlington, Iowa.

1st Vice-President, Joel W. Hardesty, M. D., Hannibal, Mo.

2nd Vice-President, Lindon Seed, M. D., Chicago, Ill.

3rd Vice-President, William M. Hogle, M. D., Keokuk, Iowa.

Secretary-Treasurer, Harold Swanberg, M. D., Quincy, Ill. (Re-elected.)

The following were recently elected to membership on the Board of Directors of the Society:

A. H. Bitter, M. D., Quincy, Ill.
James Graham, M. D., Springfield, Ill.
C. F. Harmon, M. D., Springfield, Ill.
W. L. Hanson, M. D., E. St. Louis, Ill.
C. C. Maher, M. D., Chicago, Ill.
W. C. Goenne, M. D., Davenport, Iowa.
K. A. Meyer, M. D., Chicago, Ill.
Edmund Lissack, M. D., Concordia, Mo.
Q. U. Newell, M. D., St. Louis, Mo.
Dan G. Stine, M. D., Columbia, Mo.
F. E. Sultzman, M. D., Hannibal, Mo.
F. G. Ober, M. D., Burlington, Iowa.
E. J. Lessenger, M. D., New London, Iowa.

MISSISSIPPI VALLEY MEDICAL SOCIETY
1939 ESSAY AWARD

The Mississippi Valley Medical Society offers a cash prize of $100.00, a gold medal and a certificate of award for the best unpublished essay on a subject of interest and practical value to the general practitioner of medicine. Entrants must be members of the American Medical Association. The winner will be invited to present his contribution before the next annual meeting of the Mississippi Valley Medical Society at Burlington, Iowa, September 27, 28, 29, 1939, the Society reserving the exclusive right to first publish the essay in its official publication—the *Mississippi Valley Medical Journal* (incorporating the *Radiologic Review*). All contributions must not exceed 5,000 words, be typewritten in English in manuscript form, submitted in five copies, and must be received not later than May 1, 1939. Further details may be secured from Harold Swanberg, M. D., Secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Ill.

The 1938 winning essay, as well as several other essays which received meritorious consideration in the 1938 Essay Contest, appears in the January, 1939, issue of the *Mississippi Valley Medical Journal* (Quincy, Ill.).

Book Reviews

The Practice of Medicine. By Jonathan Campbell Meakins, M. D. Second Edition. With 521 Illustrations, Including 43 in Color. St. Louis. C. V. Mosby Company. 1938. Price, $12.50.

Since the appearance of the first edition many new discoveries in functional pathology, etiology and prevention and cure of disease have appeared in rapid succession. Everything that is new and reliable have been incorporated in this second edition. The work is strictly up-to-date and should be in the library of every up-to-date physician.

Human Pathology. By Howard T. Karsner, M. D. 18 Illustrations in Color and 443 Black and White. Fifth Edition Revised. Philadelphia & London. J. B. Lippincott Company. 1938. Price, $10.00.

This edition is intended as a text-book. This work is a veritable mine of practical information. The text is lucid; the illustrations are precise and appropriate. It is no doubt the most scholarly of all the standard works on the subject.

Urology. By Daniel N. Eisendrath, M. D., and Harry C. Rolnick, M. D. 750 Black and White Illustrations and 12 in color. Fourth Edition, Entirely Revised and Reset. Philadelphia, Montreal, London. J. B. Lippincott Company. 1938. Price, $10.00.

The fact that the work has gone through four editions in ten years is ample evidence of its popularity. The work has been completely revised and rearranged for more forceful teaching presentation and more ready accessibility for general use.

Doctor Colwell's Daily Log for Physicians. Issued by the Colwell Publishing Company, Champaign, Illinois. Designed by a physician for physicians. For the year 1939. This is the twelfth annual edition.

This is one of the most practical and simple systems of bookkeeping yet offered for physicians. It offers a bird's-eye view of medical man's daily financial condition.

Present day medical schools provide little or no training in bookkeeping. Many physicians, unacquainted with the Log and using crude methods of their own invention, will welcome the 1939 Daily Log for Physicians.

After years of experience, we have come to believe that the Log's biggest job is that of providing a display of Important income and expense items. Figures that are essential not only for income tax returns, but for budgets, legal aids, watching progress.

Subsidiary to the financial records are several memorandum forms; records of inoculations, surgery, obstetrics; government-required records of narcotics dispensed and social security tax figures.

This means of medical bookeeping was devised by a physician with an excellent background of city and country practice. It is edited annually by him in the light of new needs suggested by users.

Dr. Bradley Remembers. A novel by Francis Brett Young, author of "They Seek a Country." New York. Reynal & Hitchcock. 1938. Price, $2.75.

Of all living writers of the first rank, Mr. Young is the one most suited to writing a truly great story of a doctor's life. Before he turned to letters as a profession, this distinguished novelist was himself a doctor; several of his earlier works have already been permeated with the authentic smell of the surgery and the whited silence of the hospital. Now he has drawn on his own rich experience to create a three-dimensional, undistorted portrait of a doctor's life.

There have been many previous novels purporting to present the inside view of the medical profession, and not always to its advantage. "Doctor Bradley Remembers" is, we feel, a human, heart-warming, essentially truthful story of a typical physician of the old school, whose life was spent in the service of the people whose lives he touched.

Sanitization of the Drinking Glass. Part One—Methods and Procedures, by Jack G. Baker. Part Two—Practical Control, by Raymond V. Stone, D.V.M. Los Angeles. National Association of Sanitarians.

Los Angeles, Calif.—The germ-infected drinking glass in taverns and soda fountains was condemned by the National Association of Sanitarians as having negated the elaborate safeguards set up by public health officials to provide a safe and wholesome food supply. The announcement was contained in a sanitarian's manual of instruction issued by the association and titled "Sanitization of the Drinking Glass."

"Dirty dishes, glasses and utensils," it said, "harbor the very disease-producing organisms that have been so carefully guarded against up to the point of use." An increase in the number of food and drink places generally and the fact that an increasing number of people eat away from home combine to "make the dish and utensil problem one of major public health importance."

A Manual of Reparative Plastic Surgery. By J. Eastman Sheehan, M. D. With 314 illustrations and 18 full-page plates. New York, London. Paul B. Hoeber, Inc. 1938. Price $5.50.

This volume is offered to the surgical profession first as an up-to-date statement of the service to be had from the tissues of the body and of what they demand by way of respect if they are to afford the maximum of such service; and second, as a compendium of information covering many varieties of surgical intervention with a view to plastic repair. The manual, with admirable previty, presents the fundamental principles of plastic repair, plastic materials available and their choice, wound treatment, etc., as well the detail of surgical techniques and procedures for plastic repair on all parts of the body. It will be a welcome addition to the active surgeon's working library by one known as a master of his subject.

Original Articles

CANCER OF THE LARYNX
WITH THE DESCRIPTION OF A NEW INSTRUMENT FOR INTRALARYNGEAL IRRIDATION

FRANK E. SIMPSON, M.D.
CHICAGO

Cancer of the larynx may be 1. extrinsic, originating in the walls outside the cavity of the larynx 2. intrinsic, originating in the interior of the larynx 3. mixed, due to an extension of extrinsic cancer to the interior or intrinsic cancer to the exterior of the larynx.

Many advanced cases may be included under mixed cancer, it being impossible in most cases of this type to determine the exact point of origin. Secondary deposits in the larynx from cancer elsewhere in the body are practically unknown.[1]

EXTRINSIC CANCER

Extrinsic cancer may start on the epiglottis, arytenoids, ary-epiglottic folds, pyriform sinuses or the pharyngeal surface of the cricoid cartillage. It is nearly always squamous celled carcinoma.

Usually of highly anaplastic type, it extends more or less rapidly to adjacent tissues, and metastasizes early to the lymph nodes of one or both sides of the neck.

The first symtom of extrinsic cancer is usually discomfort in swallowing.

Laryngoscopic examination is necessary to detect the site of the tumor which may appear as a dusky red, dirty white, or greyish swelling or as an irregular, sloughing, easily bleeding ulceration, a few millimeters to one or more centimeters in diameter.

Biopsy is necessary for a positive diagnosis.

Treatment. Surgery: Surgical procedures in extrinsic cancer "entail a formidable operation with high operative and post-operative mortality and morbidity and furnish an extremely small percentage of permanent cures."[2]

For these reasons most authors believe that irradiation of some type is the method of choice in extrinsic cancer.

Irradiation. X-rays by the Coutard method have been said to yield approximately 15% of lasting cures.[2] Palliative effects are the rule.

Locally we use irradiations with radon to the mucous membrane surface of the tumor. An applicator measuring 2x2 cm. containing 500 mc. of radon screened with 2 mm. of silver and 5 mm. of rubber may be applied daily in seances of 5 to 10 minutes each for a total of 750 to 1000 mc. hrs.

The implantation of radium or radon needles or "seeds" (radium puncture) is seldom indicated. If undertaken, it should be used with a full understanding of possible destructive effects.

The radium bomb to the external cutaneous surface over the tumor is also used in conjunction with internal surface treatment.

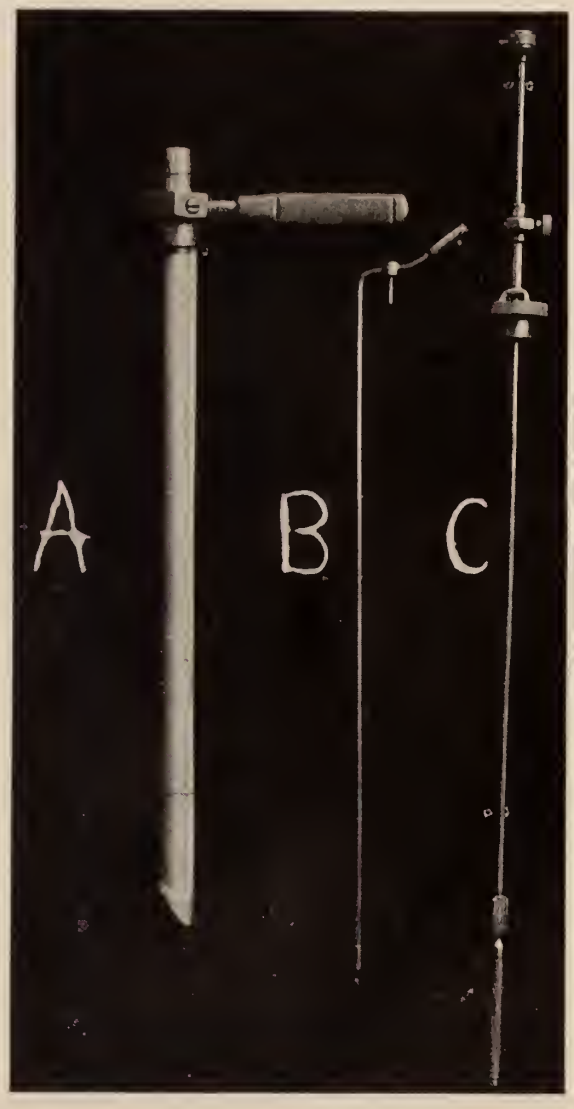


Fig. 1.
A. Aluminum tube.
B. Mignon light carrier.
C. Gold radon capsule and carrier.

INTRINSIC CANCER

Intrinsic cancer may arise from the true vocal cord, the ventricle, ventricular band, the interarytenoid or subglottic area.

Early Stage. As one true vocal cord is the commonest site, persistent hoarseness is usually the first symptom. The hoarseness may be progressive.

In 66 cases, Schmiegelow[3] found that the vocal cord was the point of origin in at least 36.

Cancer of the true vocal cord metastasizes late to the adjacent lymph nodes of the neck as the cartilaginous box of the larynx is poorly supplied with lymphatics.

When cancer starts in the ventricle, ventricular band or the interarytenoid region discomfort or pain is the first symptom.

St. Clair Thomson says: "Any continuous discomfort in the throat or any hoarseness lasting more than 3 weeks in a patient over 40 years of age should call for a thorough examination of the larynx by a skilled laryngologist."[4]

Subglottic cancer usually arises on the inner or under surface of the vocal cord or in the subglottic area. It may grow to a considerable size before giving rise to symptoms—interference with speech, respiration or swallowing.

It involves the regional lymph nodes of the neck early.

Late Stage. Situated on the vocal cord, cancer may be confined to the surface or margin of the cord for months or even several years. Sooner or later the growth spreads, usually forward along the cord, reaches the commissure and encroaches on and obstructs the glottis. There may then occur:

1. Increasing interference with speech, respiration and swallowing. Cough is usually absent but may occur. Aphonia, intense dyspnea (requiring tracheotomy) and serious dysphagia may develop.
2. Pain often radiating to the ear and head.
3. Hemoptysis. Sometimes tumor tissue is coughed up.
4. Fetor and salivation.
5. Sepsis—fever, loss of strength, appetite and weight.

Death may result from a combination of asphyxia, dyspnea, hemorrhages, sepsis and pneumonia.

Laryngoscopic Examination. Occurring most commonly on the middle or anterior third of one cord, early cancer may affect an area only a few millimeters in extent. It may appear as a persistent reddish area, which may be roughened or thickened; a whitish area giving an irregular, fringe-like border to the cord; a white, pinkish or reddish-grey lump, which may be "cupped" or retracted in the center; a nodular or warty lump; an irregular ulceration; any combination of these appearances.

Mobility of the Cord. Early cancer situated on the true cord does not necessarily impair its mobility.

Late cancer impairs the mobility and may "fix" the cord.

A mobile cord therefore does not speak against malignancy.

Impaired mobility or fixation of the cord on phomation speaks for the malignancy of a neoplasm but is not diagnostic as a paretic cord may be injected and give the appearance of malignancy.

On the ventricle, ventricular band or interarytenoid region, cancer usually appears as an irregular, greyish, easily bleeding ulceration.

St. Clair Thomson says:

"It is as important as it is difficult to recognize these early appearances of cancer. Suspicion should be aroused if a definite, unilateral growth which might at first suggest a benign neoplasm occurs in a patient over 40, especially if there is an infiltration or impairment of action in the cord, if it is situated in the middle or anterior third of the larynx and if the surface is white or greyish."[5]

DIAGNOSIS

A general diagnostic survey is indicated including examination of sputum, blood and chest with Roentgenograms.

Tuberculosis and cancer, syphilis and cancer or all three diseases may coexist in the larynx. Repeated laryngoscopic examinations should be made.

One must differentiate:

1. Simple inflammations (chronic laryngitis).
2. Granulomas (tuberculosis, syphillis, rhinoscleroma).
3. Benign tumors (singer's nodule, keratosis, pachydermia, papilloma, fibroma, angioma, enchondroma).
4. A foreign body, blood clot, submucous hemorrhage, or prolapse of the ventricle.

Biopsy. Biopsy is necessary to establish beyond doubt a diagnosis of cancer, sometimes more than one biopsy being required. Biopsy should be performed by the expert laryngologist.

In the famous case[6] of the Crown Prince, afterward Frederick III of Prussia, a persistent hoarseness was noted in January 1887. Laryngoscopic examination disclosed on the left vocal cord near the middle third a "pale red nodule" about 4 mm. long and 2 mm. high. Biopsy was performed by Morrell Mackenzie, in May, 1887, the sections being examined by Virchow.

Unfortunately Virchow reported that the tissue submitted indicated a benign tumor although one "cell nest" was found.

This report led to long continued and disastrous attempts to treat the growth by intralaryngeal surgical measures. The disease was soon found to be malignant and terminated fatally in June, 1888, one and one-half years from the beginning of the symptoms.

Pathology. Intrinsic cancer of the larynx is nearly always squamous celled. Occasionally basal celled carcinoma and adenocarcinoma occur.

Rarely endothelioma and sarcoma are found.

Of 60 cases of intrinsic carcinoma of the larynx treated by St. Clair Thomson, 33 were graded 1 and 2; 27 were graded 3 and 4.[7] Grades 1 and 2 are usually considered somewhat radioresistant; 3 and 4 radiosensitive.

Harris and Klemper[8] concluded that with protracted Roentgen therapy the histologic structure was of minor importance in determining the radio resistance of laryngeal carcinoma.

TREATMENT

Surgery. Intralaryngeal excision, "window" resection, laryngofissure, hemilaryngectomy and total laryngectomy have been proposed for early intrinsic carcinoma.

If surgery is chosen as the method of treatment, laryngofissure is probably the operation of choice.

To be successful, laryngofissure should be restricted to early and very carefully selected cases in which the cancer is limited to one cord, the false cord not being involved, and in which the growth extends but a short distance past the midline at the anterior commissure. The operative mortality varies with different surgeons from zero to 25%; the cure rate from 7.7% to 87%.

Jackson had 79% of 3 year cures in 29 cases.[9] The talking voice is preserved to a greater or less degree but the singing voice is lost. Total laryngectomy may be indicated in more advanced cases in which, however, the disease is still intrinsic. In the most skillful hands total laryngectomy has an operative mortality of 3.2%.

MacKenty had 88.7% of lasting cures in 89 cases.[10]

The voice is of course lost but vocal substitutes are fairly satisfactory. Quick[11] believes "the present status of radiation therapy renders total laryngectomy obsolete."

X-Rays. Buckley and Hoffman[2] believe operable, intrinsic carcinoma should be treated by surgical operation; inoperable intrinsic carcinoma by some form of irradiation.

At the present time the so-called Coutard technic is usually employed. Daily divided doses are given to the cutaneous surface over the larynx for a period of 21 to 42 days.

Coutard achieved 32% of 3 year cures in 77 cases.[12]

Radium. Various methods have been used.

1. The radium "bomb" may be applied to the cutaneous surface over the larynx. There have been a few lasting cures.

2. The Ledoux-Harmer-Finzi method.[13] A window is made surgically in the thyroid cartilage on the side of the growth and radium needles are applied exterior to the mucosa over the lesion. With this method necrosis of the cartilage may theoretically be avoided.

There have been a few lasting cures.

3. Radium or radon needles or "seeds" have been implanted directly into the tumor after laryngofissure and tracheotomy. This method gives rise to pain and there is danger of necrosis of the laryngeal cartilages. While there have been a few lasting cures we believe radium puncture is contraindicated as a routine procedure.

4. Intralaryngeal irradiation.

With the older methods of introducing radium or radon into the larynx the patient's breathing was often obstructed by the applicator. The laryngeal cartilages were sometimes injured because of the impossibility of maintaining a proper distance between the radium and the inner laryngeal wall.

In the writer's book, Radium Therapy,[14] published in 1922, an intralaryngeal applicator devised by Dr. O. T. Freer and the writer was

described. This applicator was subsequently discarded because of technical difficulties.

We have devised an intralaryngeal instrument[15] modelled after the Jackson bronchoscope which minimizes or overcomes the difficulties mentioned.

DESCRIPTION OF INSTRUMENT

The instrument consists of 3 parts: (A) an aluminum tube (B) a mignon light carrier (C) a gold radon capsule attached to one end of a steel or nickel radon carrier. Instead of gold the radon capsule may be made of platinum.

The aluminum tube has the following dimensions: length, 26 cm.; outside diameter, 10 mm.; thickness of wall, 1 mm.

The tube is open at both ends so that air passes freely through it thus allowing the patient to breath comfortably during the treatment. Aluminum was chosen for this part of the instrument in order to absorb the secondary rays of Sagnac which may be irritating or even caustic.

The mignon light carrier slides in a groove in the wall of the aluminum tube. The distal end of the tube may thus be lighted up to facilitate its insertion into the larynx.

The gold radon capsule has the following dimensions: length, 4.5 cm.; outside diameter, 5 mm.; wall thickness, 1 mm. It contains two powerful glass radon tubes enclosed in two standard enameled silver screens placed end to end.

Technic. The patient is given ¼ grain of morphine sulphate and 1/100 grain of atropine sulphate hypodermically one-half hour prior to the treatment. The pharynx and interior of the larynx are anesthetized with 2% pontocaine hydrochloride.

After insertion of the aluminum tube containing the light carrier into the larynx between the true vocal cords until the distal end lies 2 cm. below the cords, the gold radon capsule is introduced into the aluminum tube until the end of the capsule is flush with the end of the aluminum tube.

Three small flanges on the radon carrier hold the radon capsule exactly in the center of the aluminum tube but do not obstruct the lumen and hence do not interfere with breathing.

Treatments last 10 or rarely 15 minutes and may be repeated in from 2 to 5 day intervals depending on the indications. Longer treatments can be given but are not advisable. One should use in addition radium bomb treatments to the cutaneous surface over the larynx.

Dosage. Critics have said that those who use radium have no unit of dosage such as the roentgen in X-ray therapy.

There is some justification for this criticism. However, if one is given complete data, i. e., the quantity of radium—the size, number and arrangement of the radium tubes—the screening —the distance of the tubes from the tumor—the duration of each treatment and the frequency of its repetition, the correct dosage can always be worked out with reasonable accuracy.

We use radium and radon interchangeably as one millicurie of radon is equivalent to one milligram of metallic radium.

In the interior of the larynx we use radon because of the possibility of concentrating a large quantity of radon in a very small tube.

Experimental Data. If we apply a radon tube 14 mm. long screened with 1 mm. of gold and 1 mm. of rubber in contact with the skin, the erythema dose is found to be 118 mc. hrs.

At 12 mm. distance the erythema dose is found to be 236 mc. hrs.

At 5 mm. distance, the distance at which we treat carcinoma of the larynx, we have calculated the erythema dose to be 153 mc. hrs.

These experiments and calculations are for the radon tube applied in one seance.

If we increase the number of seances to 9 and spread the dose over 4 weeks, we estimate that the dose may be increased by 60%. 60% of 153 is approximately 91 and this added to 153 gives 244. In other words, a total of 244 mc. hrs. given in 9 seances is the erythema dose given with a radon tube 14 mm. long screened with 1 mm. of gold plus 1 mm. of rubber and placed 5 mm. from the surface of the skin.

In the larynx we use 2 radon tubes, each 14 mm. long, placed end to end. The erythema dose may therefore be expressed as 488 mc. hrs., i. e., twice 244. The actual erythema dose is somewhat less than this due to the contribution of the rays from tube number one to tube number two and vice versa.

TREATMENT OF CARCINOMA

Unfortunately there is no such thing as a carcinoma dose because different carcinomas show different degrees of radiosensitivity and therefore require different doses.

We use the term—toleration dose.

In other words, we give to the tumor a dose based on experience which we believe the normal tissue will tolerate without seriously impairing its integrity.

In the larynx one should be extremely careful not to exceed the toleration dose.

Lymph Nodes of Neck. For convenience the treatment of enlarged lymph nodes of the neck secondary to all types of laryngeal cancer may be referred to at this point.

No blanket rule can be laid down to cover all contingencies and all cases. It is impossible to tell positively without a microscopic examination of the nodes whether they are carcinomatous or inflammatory.

If one submaxillary node is enlarged, hard and insensitive so that it is regarded as carcinomatous, surgery is the method of choice. The results are good.

If other nodes are involved the results of surgery are poor, irradiation being the method of choice. Unfortunately the results of irradiation are also poor although a good deal of palliation may be obtained. We always use surface irradiation—never radium "puncture."

If large groups of nodes in the neck resolve under irradiation we regard the condition as inflammatory or as highly anaplastic and therefore radiosensitive carcinoma.

REPORT OF CASE

Mrs. X, 80 years old, became hoarse in October, 1937. In March, 1938, when she could scarcely speak above a whisper, she entered the Central Free Dispensary (Rush Medical College) Chicago—service of Dr. E. W. Hagens.

History of Patient—One interesting fact was noted—the patient's son died at the age of 42 of cancer of the larynx 12 years previously, i.e., in 1925. The son was an inveterate smoker of cigarettes—the patient herself had never used tobacco or been subjected to known laryngeal irritation.

Laryngoscopic Examination—Examination by Dr. E. W. Hagens disclosed on the anterior third of the right vocal cord a pale red nodule, 6 mm. long and 4 mm. high. Both cords were freely movable.

Biopsy by Dr. Hagens revealed squamous celled carcinoma, Grade 2.

Radium treatment was begun April 7, 1938, with the intralaryngeal instrument described.

PROTOCOL OF INTRALARYNGEAL IRRADIATIONS

April 7, 1938	347 mc. for 10 minutes	57.8 mc. hrs
April 11, 1938	438 mc. for 10 minutes	73 mc. hrs.
April 14, 1938	198 mc. for 10 minutes	33 mc. hrs.
April 18, 1938	180 mc. for 15 minutes	45 mc. hrs.
April 20, 1938	155 mc. for 10 minutes	25.8 mc. hrs.
April 25, 1938	278 mc. for 10 minutes	46.3 mc. hrs.
April 29, 1938	330 mc. for 10 minutes	55 mc. hrs.
May 2, 1938	273 mc. for 10 minutes	45.5 mc. hrs.
May 5, 1938	322 mc. for 10 minutes	53.6 mc. hrs.
	Total 95 minutes	435 mc. hrs.

External Surface Irradiations—During this period—April 7 to May 5, 1938—5000 mc. hrs. were given to the cutaneous surface over the larynx with the radium bomb at 4 cm. distance.

There was no pain at any time from the intralaryngeal or external irradiations.

Subsequent History of Patient.—On May 1, 1938, the patient's speaking and singing voice was restored and has remained unimpaired.

On June 1, 1938, the vocal cords appeared normal and have remained well to the time of writing.

A motion picture of the technic of treatment and a phonographic record of the patient's speaking and singing voice made October 6, 1938, were exhibited at a meeting of the Chicago Laryngological Society, November 7, 1938 and again at a meeting of the Chicago Roentgen Society, November 10, 1938.

COMMENT

Persistent hoarseness without obvious cause in persons past 40 should be regarded as very suggestive of cancer of the vocal cord. Early diagnosis and treatment are most desirable.

The intralaryngeal method described has the following advantages:

1. It is non-operative, a desirable feature in elderly and feeble patients.
2. The method is painless.
3. The patient's breathing is free and unobstructed during treatment.
4. The radon is held at a fixed distance—5 mm.—from the surface of the tumor so that dosage is accurate.
5. Danger of injury to the larynx is minimized.
6. The speaking and singing voice may be restored.
7. If irradiation fails, operation can still be resorted to if advisable.

While designed especially for intrinsic carcinoma of the larynx, the instrument can also be used for benign lesions such as keratosis of the cord or angioma of the larynx.

It can also be adapted to subglottic lesions and lesions of the bronchus or esophagus of suitable character.

The intralaryngeal method may be advantageously combined with irradiation with the radium bomb or x-rays applied to the cutaneous surface over the larynx.

It is perhaps unnecessary to point out that intralaryngeal irradiation should be used only by one skilled in the use of the bronchoscope.

For help in the development of the intralaryngeal instrument and the treatment of cases, I am greatly indebted to Drs. E. W. Hagens, W. Bond, D. E. Brown and to my associates Dr. J. E. Breed, and J. S. Thompson, Ph.D., to all of whom I wish to express my thanks.

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TRAUMATIC RUPTURE OF THE MALE URETHRA

HARRY CULVER, M. D.

CHICAGO

The extent of this discussion, by title, should include such lesions of the urethra as gunshot wounds, injuries produced by sharp penetrating objects, false passages by intra-urethral instruments and necrosis from pressure, as well as the more common and therefore much more important lesions of the male urethra associated with fractures of the bony pelvis and urethral lesions resulting from straddle injuries.

Read before Section on Surgery, Illinois State Medical Society, May 17, 1938, Springfield.

The necessity for detail in describing the normal and pathological anatomy involved in presenting a reasonably clear clinical picture of urethral trauma associated with fractures of pelvic bones and likewise with straddle injuries, limits my discussion to these two groups of lesions. My time will therefore be used exclusively in a clinical discussion of these lesions as understood from the management of thirty-two patients thus afflicted.

For an understanding of these conditions, sufficient to make a logical diagnosis and carrying out subsequent management, a detailed mental picture of the local anatomy must be held by the surgeon. To be sure, the history of the type of trauma received together with the physical findings, including films, are imperative, but a complete picture of all possibilities can only be had by having more than a superficial understanding of the anatomy possibly involved.

The triangular ligaments, or urogenital diaphragm, is a dense fibrous tissue of two parallel layers about one centimeter apart, firmly fixed to the bony pelvis along each descending ramus from the symphysis down almost to the ischial tuberosities, thus firmly separating the deep pelvic structures from the superficial structures.

The male urethra penetrates this structure perpendicularly near its center; obviously the urethra here is a fixed structure, which renders it vulnerable at this point. Ruptures of the urethra above this diaphragm may result in extravasation of blood and urine which will regularly be confined to tissues above the urogenital diaphragm. The course and extent of the extravasation upward is determined by periprostatic and perivesical fascial cleavage planes and by the force exerted by the contracting bladder. Ruptures of the urethra below the urogenital diaphragrm may result in extravasation of blood and urine which regularly is confined distal to this diaphragm. Combined lesions rarely occur.

Straddle injuries of the male urethra are produced by direct sudden force applied against the perineum, usually caused by the patient falling astride some fixed object. The force of the fall does not necessarily wholly determine the extent of the urethral injury. Some seemingly minor accidents may result in the most severe urethral damage. The angle at which the force is applied

is an important factor. Upward and backward force on the urethra against the fixed triangular ligaments or against the arch of the symphysis may be relatively slight and still produce great urethral damage, while a similar force applied upward and forward is certain to cause less severe urethral damage or none at all.

The clinical picture varies with the extent of the injury. Minor degrees of urethral rupture, when encountered early, may present a patient with slight but constant urethral bleeding from the meatus associated with excruciating perineal pain; there may or may not be any interference with urination. Examination of the perineum will show only slight swelling or none at all. This same patient several hours later may have urinary retention caused by local edema and periurethral hematoma, while the perineum presents an ecchymosis of the skin and a semifluctuating mass. The local pain remains constant or is increased by pressure from hematoma.

Such a patient seen early, without severe urethral bleeding and with no apparent interference with urination, should be treated with morphine, ice packs locally and frequent observation. There is no indication for attempting to pass a urethral catheter; it only increases the possibility of local infection, which is sometimes a factor which determines whether conservative management shall be continued or surgery becomes necessary. Under conservative management the development of an appreciable perineal hematoma without interference of urination, a perineal incision to evacuate the clots only, is indicated; urethrotomy may not be necessary. Should the urethral bleeding be considered too severe and a catheter can be readily passed to the bladder, it should be left indwelling and perineal pressure applied. Bleeding may be controlled and surgery prevented.

Obviously those patients with interference of urination, perineal hematoma and an impassable urethra are at once in need of surgical treatment. There are many variations of clinical pictures between these two extremes and, while conservatism is a desirable trait when local conditions are understood and clinical progress is evident, procrastination often results in the loss of valuable tissue. Early surgical treatment is the only way devitalized urethral and periurethral tissues can be saved.

These lesions are distal to the urogenital diaphragm and therefore should be surgically approached through the perineum. An external urethrotomy is made, hematoma removed, and a catheter placed in the bladder through the perineal urethrotomy. In severe urethral lacerations some difficulty may be encountered in recognizing the proximal uethral opening. Some help may be had here by having a good perineal exposure, bleeding reasonably controlled, then having an assistant press over the bladder region suprapuically. Expressed urine sometimes directs the operator's attention to its outlet. This procedure has been successful for me in three patients. If this fails and a reasonably long, intelligent search has been made unsuccessfully, it is much safer surgery to do a cystotomy and



Fig. 1. (Left) Dissection showing anterior layer of triangular ligament and its attachment to the bony pelvis. Note the perpendicular penetration of the urethra.

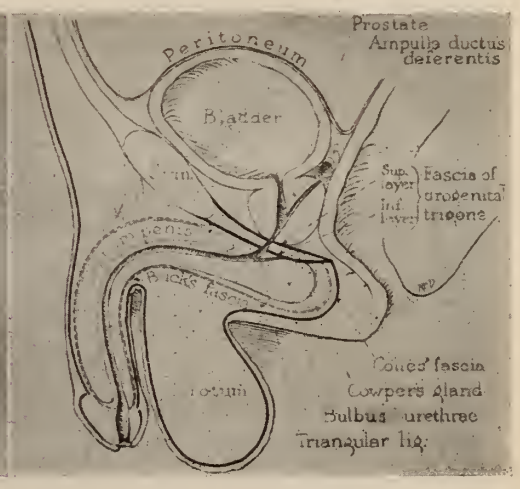


Fig. 2. (Right) Drawing to show the various fascial tissues involved in deep and superficial extravasation.

retrograde sounding than to indefinitely probe and stab blindly. After the perineal catheter is placed in the bladder it may be closed suprapubically; however, a suprapubic bladder drainage tube adds safety to the operation and in my experience does not prolong the convalescence.

Should there be complete separation of the entire circumference of the urethra, approximation by a single suture on the roof suffices for a bridge for complete repair; however, if it is technically feasible to make an end-to-end anastomosis of more of the entire circumference, there is correspondingly less postoperative stricture. Technical inability to bring the proximal and distal ends together at any point naturally results in dense stricture, difficult but not impossible of successful conservative postoperative management. Careful regular sounding results eventually in complete epithelialization of the intervening area. Tissue transplants have not been successful.

Fourteen of the thirty-two patients with ruptured urethra had straddle injuries with no mortality. Ten of these had external urethrotomies, seven of them combined with cystotomy and retrograde catheterization, while four had conservative treatment. One patient was moved from another hospital three months after injury. He had had urinary difficulty, but not complete retention. A large perineal hematoma became infected and opened spontaneously, resulting in multiple perineal scrotal and inguinal fistulae. Ten months more hospitalization and five operative attacks were necessary to do what might hive been done readily with one early operation with a hospital stay of three weeks, which was the average stay of those so managed.

Experience has shown that after hemorrhage and urinary retention have been cared for, the most damaging factor is local sepsis. It makes for long-standing urinary fistulae and finally more marked local fibrosis characterized clinically by more resistant urethral strictures. Local sepsis can best be prevented by early surgical management.

Regardless of the type of early management of these lesions, whether conservative or surgical, it is imperative that they have regular urethral soundings at increasing intervals for years; patients have been successfully treated non-surgically, then allowed to pass from observation until tight traumatic strictures have formed.

Three of these fourteen patients complained of impotency. Two of them recovered spontaneously within two years.

The vast number of severe automobile accidents in recent years has greatly increased the incidence of fractured pelves, therefore a proportionate increase in associated ruptures of the posterior urethra. In my series there are eighteen such lesions of the urethra. Due in great part to severe injuries of other structures, there is a great morbidity and relatively high mortality.

Fracture of either descending ramus of the

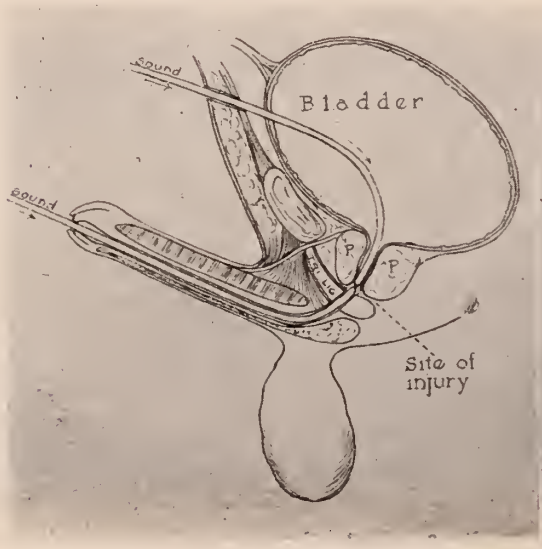


Fig. 3. (Left) The two-sound technic of reestablishing the continuity of the urethra ruptured by a fractured pelvis.

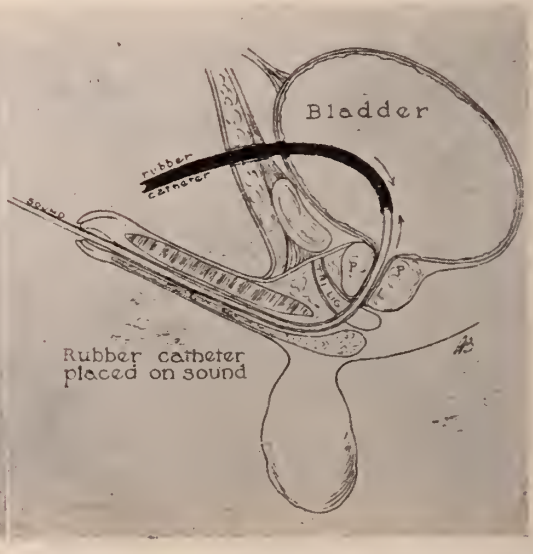


Fig. 4. (Right) Visualizing the method of placing an inlying urethral catheter following technic of Fig. 3.

symphsis and ischium may disturb the relationship of the two layers of the triangular ligament, which are about one centimeter apart at the point where they are perpendicularly penetrated by the urethra. With a pelvic fracture with displacement a greater shift in any direction of one layer of this ligament than its mate, obviously exerts pressure on the urethra at its point of entrance or exit. The degree of urethral trauma depends upon the pressure exerted by the edge of the foramen of one layer of the ligament. Clinically this urethral injury usually occurs where the urethra penetrates the posterior layer of the triangular ligament. Only in very several multiple fractures, with much displacement, does it occur also in front of the anterior layer. I have seen this combined injury but once. Anatomically a rupture between two layers is probable, but is never recognized clinically. No satisfactory explanation is at hand why the injury usually occurs at the point of entrance of the urethara into the posterior layer of the triangular ligament.

All degrees of trauma of the urethra occur here from a contusion to a complete separation of the prostatic from the membranous urethra.

With this combination of injuries shock is usually the first, most prominent feature. As this is successfully combated and the kidneys resume their function, bladder urinary retention becomes apparent either by the presence of a gradually distending bladder or by the distress of the patient being unable to void. Bleeding from the urethra may or may not be present. The urethral defect being posterior to the triangular ligament readily allows urine to escape into the surrounding tissues. Urine may be forced into these tissues involuntarily by abnormal intravesical pressure or voluntarily when the patient tries to void. As has been shown, the course of this extravasation of blood and urine is directed upward, at first being periprostatic, then perivesical, laterally and anteriorly and, if sufficient time has elapsed, continues upward, separating the transversalis fascia from the peritoneum. This advanced condition usually requires six or more hours to develop and presents a clinical picture not difficult to recognize with the experience of having seen a single case before. The contact of urine to peritoneum makes for abdominal protection rigidity which sometimes results in the diagnosis of intra-abdominal rupture of the bladder or the rupture of some intra-abdominal viscus. Such a rupture of the bladder could only occur if the bladder were distended at the time of the accident. Spicules of bone from fractures of the transverse rami of the symphysis are seen which result in extraperitoneal rupture of the bladder. This changes the clinical picture only by obliterating the diagnostic finding of a distended bladder.

Two recent cases, both pedestrians who were hit by automobiles and seen about six hours after the accidents, may present some features of diagnostic value. They had identical lesions and very similar clinical pictures. Both had separa-

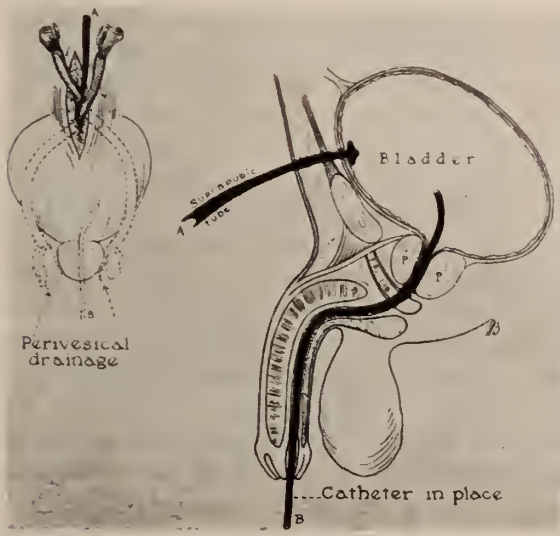


Fig. 5. (Left) Visualizing complete drainage applied. Note bilateral perivesical and periprostatic drainage.

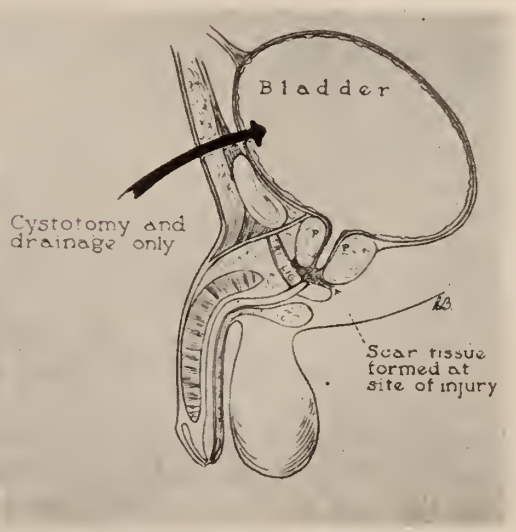


Fig. 6. (Right) Diagrammatic sketch to show urethral occlusion with organized scar following incomplete early urethral repair.

tion of the symphysis diagnosed by films and by palpation, with no other bone lesion. There was diffuse low abdominal pain and tenderness with rigidity. Neither had voided nor had any desire to do so. A catheter was readily passed to the bladder and a few ounces of bloody urine collected. Suprapubic incision revealed extraperitoneal rupture of the bladder anteriorly in each case. Undoubtedly these patients had distended bladders at the time of the accidents. Clinically they were typical pictures of ruptured posterior urethrae of six or more hours' duration, but without a palpable bladder. The ease with which a catheter could be passed to the bladder should indicate the probable diagnosis under these circumstances.

Contusions of the urethra without rupture may result in urinary retention because of local edema. A catheter can be passed without much difficulty and it should be left indwelling for a few days until the edema subsides. Paradoxically, there may be no apparent interference with urination and yet there be a definite small rupture of the urethra. This will become clinically apparent after some hours or even days when evidence of slow but progressive deep urinary extravasation presents itself.

Patients seen early after the accident who present some evidence of urethral damage but no finding of extravasation should at once have the advantage of an attempted catheterization. Should obstruction be met at the triangular ligament area with a soft rubber catheter, no further attempts should be made. The use of stiff fibrous or metal catheters is condemned. These patients should receive surgical attention at once.

The urethral injury and secondary results of this injury being posterior to the urogenital diaphragm, all surgical approaches should at first be suprapubic. This approach and this one only can properly drain the perivesical spaces, drain the bladder and allow for bladder inspection for spicules of bone.

Once the bladder is opened, a metal urethral sound is retrograded through the prostatic urethra and a similar sound is passed through the penile urethra to the diaphragm. By careful manipulation of these sounds by the same person at once, their tips are readily brought together and the retrograde sound is withdrawn through the bladder, leading the other one into the bladder. A catheter is then attached to the tip of the sound in the bladder and the sound withdrawn, bringing the catheter with it. This catheter is left indwelling to act principally as a splint for urethral repair. The sound which was passed through the entire urethra, besides being the means of placing the catheter, has produced a normal relationship of the two layers of the triangular ligaments and their foramen. The catheter placed is sufficient to hold this relationship. The perivesical and suprapubic bladder drains are removed before the inlying catheter, which should remain for at least ten days.

There are surgeons who recommend the perineal approach with end to end suture of the urethra, suggesting that it is more surgical and reduces stricture formation. The chief factor which should mitigate against this method, even by those with adequate surgical skill in perineal surgery, is the position of the patient necessary in performing it. This position, lithotomy, is prone to increase bone displacements with a great chance of increasing urethral damage.

Should perineal hematoma be present, this must be adequately drained and in my experience has been the only reason for a perineal incision in these conditions.

On examining the records of eighteen patients sustaining urethral injuries associated with fractured pelves there were four deaths or 22 per cent. mortality; one died of secondary hemorrhage 28 days following operation (probably an avoidable death) and three from associated skull fractures. Fourteen of the eighteen patients sustained their injuries by automobiles—nine were pedestrians and five were passengers. The remaining four were industrial accidents.

A prominent feature of this analysis is the fact that three of these patients were primarily incompletely operated on, resulting in the necessity for secondary operations, long hospitalization and some permanent dysfunction. I refer to those patients who had primary cystotomy and perivesical drainage elsewhere, with no attention paid to the urethra. This was discovered by consulation two, three and ten months after the injury. Emphasis need not be made here of the unbelievable fibrosis and distortion that is encountered at the site of the urethral injury. A finding was noted in one patient which directs attention to the inadvisability of attempting to pass stiff urethral catheters. This man was injured two days before consultation was requested.

His doctor thought he had placed a stiff French catheter into the bladder soon after the accident. The catheter drained unsatisfactorily and the patient was not doing well. Open operation revealed the end of the catheter in the space of Retzius.

Two patients were not operated on—one was moribund and soon died of skull fracture and the other was successfully managed by catheter (undoubtedly a contusion only).

Later management of these patients consists essentially of combating urinary tract infection and preventing urethral stricture. All urethral injuries in this connection, whether contusions or complete ruptures, must have systematic soundings for at least a year and occasional soundings indefinitely after that. Once a tight stricture has been allowed to develop the morbidity is greatly increased.

In conclusion I should like to repeat that, due to the physical nature of the urogenital diaphragm and its relation to the urethra, the course of extravasation is determined. Usually straddle injuries occur anterior to the diaphragm and the operation should be done perineally; urethral injuries with pelvic fracture occur posterior to the diaphragm and these require a suprapubic operation. Adequate and early surgical management in both types is stressed, as is absolute necessity of long follow-up treatment to control urethral stricture.

DISCUSSION

Dr. Leander W. Riba, Chicago: The opportunity to discuss Dr. Culver's paper is greatly appreciated by me. Dr. Culver was my teacher, and I do not know of anyone in Chicago who has had more experience and is better qualified to present this interesting paper to us. The anatomy, diagnosis and treatments have been so thoroughly covered that there is perhaps very little to add. There are several points which come to mind for particular consideration and discussion.

A great deal has been said and written about the use of intravenous pyelography following injuries of the urinary tract. While this would seem the ideal diagnostic procedure in practice, however, this is not always the case. Due to the large amount of abdominal gas or depressed renal function or both, accurate diagnostic definition is not always obtainable. In these unsatisfactory cases the retrograde method of investigation may now be more safely employed. For visualizing an injured urethra, a ruptured bladder or kidney, I would like to recommend the use of 20 to 25 per cent. skiodon solution. This solution provokes practically no extra-urinary tissue reaction. This slide represents perirenal extravasation of skiodon solution. Following this injection there was no fever, pain or renal dysfunction.

The management of traumatic urethral strictures has in many instances been extremely unsatisfactory. Many of these strictures are rebellious to repeated dilatation. During the past five years at Northwestern University Medical Clinic and at Passavant Memorial Hospital, we developed an electro-urethrotome which has been extremely helpful in the management of undilatable strictures. In more than 100 patients operated on we have greatly reduced the morbidity, there has been no mortality, and we believe there has been less tendency to immediate postoperative recontraction.

Superficial urinary extravasation may follow anterior urethral injuries. More often, however, this condition is associated with small caliber strictures. Some authorities prefer the term "cellulitis" rather than extravasation, because so frequently the bladder is overdistended with urine. Normal urine when injected experimentally into living tissue provokes very little local reaction. The overwhelming rapid toxicity in these patients is perhaps primarily due to the associated acute disseminating infection plus some extravasation of urine.

The present accepted urologic treatment of this serious condition is 1. obtain immediate urinary drainage either suprapubically or perineally, and 2. treat the acutely involved infected tissues by multiple extensive surgical incisions. The reported mortality following this regimen varies between 18 and 60%. By way of comparison, the accepted treatment of an acute disseminating infection, as based upon modern general surgical principles, is conservatism. Surgical incision is only resorted to if and when some localization of the process has occurred. While it is conceded that every case should be treated upon its own merits, it seems likely that if the immediate surgical interference were limited to the most simple procedure of obtaining adequate urinary drainage, our present shocking mortality could be materially reduced.

Because bleeding is so common following prostatic resections, Alcock and Foley have recommended a postoperative balloon catheter. This catheter is also useful in other conditions where permanent urethral drainage is indicated. The marked improvement in urinary drainage which has been brought about with this catheter is attested to by all who have used it. They are usually quite comfortable, allow free drainage from the anterior urethra and become dislodged only under very unusual circumstances. The only drawback regarding their use is economic; they are rather expensive, costing $3.50 each.

In closing, I would like to say a word about the proper suture material to be used in the surgical repair of the urinary bladder. In the light of our recent knowledge the routine use of all heavy catgut, particularly plain catgut, should be discouraged. With the exception of silk, Robert Bates of Northwestern recently has shown "plain catgut excites prompt, violent tissue reaction which delays the appearance of fibroblasts and so delays sound healing. Small chromic catgut, number 000, is associated with retarded and

lessened tissue reaction, early appearance of fibroblasts and early healing. Wound support and healing are most satisfactory when the smallest chromic sutures are employed." Recently a friend of mine from the east, commenting on a bladder operation he had seen, stated "I don't see how that bladder can ever heal with the yards of heavy catgut which were used during the operation."

Dr. V. D. Lespinasse, Chicago: There are several points I would like to mention in connection with this particular type of injury. First, to call attention to one fact that is peculiar to this type of injury. Why should trauma to the perineum cause serious trouble? Because the urethra is cut off, and in addition to just ordinary treatment of contusions some arrangement must be made for the disposal of urine. Urine in itself is a very dangerous substance to tissue, especially when mixed with infection. So the primary care is very simple—cut. Wherever there are swellings in the perineum, cut and let it go at that. The urine will drain out through these openings. The same method applies for injuries about the triangular ligament. This is the primary method of handling this type of injury.

After the emergency is passed and the shock is recovered from, then you need to do something to reestablish the urethra. As Dr. Culver showed you, with sounds, getting that urethra lined up as soon as you can. This is usually easier from above than from below. There is one point, in trying to find the urethral ends, if you are in the perineum; all the structures are traumatized and hemorrhagic and you cannot always identify the anatomical parts. There is an old procedure named after an Irish surgeon. To carry this out you put your finger in the rectum, locate the tip of the prostate and then take a knife and stab through the perineum, just missing the end of your finger, and you will be in the urethra.

A type of injury Dr. Culver did not mention is injury to the anterior urethra. I have had three instances of it, that is, injury of the anterior urethra from compression between some object and the symphysis. When the penis is caught between the symphysis and a plank, or some object, it gets crushed, and rest assured this is a very serious injury. It is one that is not of very common occurrence, it is true, but sometimes it occurs, and there is a question with injuries of that sort as to the advisability of amputating the distal end of the penis.

Dr. Sumner L. Koch, Chicago: I am sorry that Dr. Lespinasse did not emphasize that the incisions made in the perineum to permit the escape of extravasated urine must be dressed with aseptic care so that no infection can be added from without. Since he comes from Northwestern he should have stressed that principle.

Dr. Harry Culver, Chicago (closing): I wish to thank the gentlemen for the liberal discussion. I would like to say one thing about the Cox procedure. I am wondering what he would do if he were not able to judge the distance so accurately as to just miss the finger. I have been afraid to try it because the triangular ligament must be pierced and the possibilities of incising the external sphincter are much too great. I have seen this complication result. The dangers are too serious to ever make such a procedure a practical one.

THE PREMATURE INFANT—EARLY GENERAL AND FEEDING CARE

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At the Annual Meeting of the American Academy of Pediatrics held in New York City on May 19, 1935, the following resolution was passed in an attempt to define prematurity:

"For statistical purposes and comparison of results of care, a uniform standard for diagnosis of prematurity is important.

"A premature infant is one who weighs 2,500 gm. or less at birth (not at admission) regardless of the period of gestation.

"All liveborn premature infants should be included, evidence of life being heart beating or breathing."

Therefore, premature infants may be classified for practical clinical purposes to include any infant, whether a single or multiple birth, born prematurely, at term or even past term, whose weight at birth is below 2,500 grams (5½ pounds). The inference is that the infant is not completely prepared for full, normal, independent extra-uterine life. There may be, however, ony a relative body weakness in the absence of inherited constitutional debility and malformations. Full consideration must be given in the case of each individual infant to the precipitating causes in the parents and the infant, as well, which might have led to premature delivery or pathological intra-uterine development.

It is well known that the younger and smaller the fetus when leaving the uterus the greater are the difficulties to be overcome in carrying out required body functions necessary to life and, therefore, the consequent lower vitality.

A second resolution passed at the same meeting of the American Academy of Pediatrics Meeting expressed the desirability of registering mortality in the following manner:

"1. In weight groups: number of cases should be studied in five weight groups—

Read before the Conference on Diseases of Children at meeting of Illinois State Medical Society, May 17, 1938, at Springfield.

(1) Under 1,000 gm.
(2) 1,000-1,250 gm.
(3) 1,251-1,500 gm.
(4) 1,501-2,000 gm.
(5) 2,001-2,500 gm.

"2. Age at time of death of various weight groups.

"3. Age at time of admission of infants received from other hospitals and homes."

Benefit to the Infant of a Prolonged Gestation: Clifford has estimated the expected intra-uterine weight gains to be:

	Gain per week
Fifth lunar month	120-150 gm.
Seventh lunar month	180-240 gm.
Ninth lunar month	300-360 gm.

The value of continuing intra-uterine life as long as possible is well evidenced by the mortality rate based on weights taken from the records at the Sarah Morris Station.

Mortality Rates Based on Weight

	Survival
Under 1,000 gm	15.5 percent
1,000-1,500 gm.	43.3 percent
1,500-2,000 gm.	75.2 percent
2,000-2,500 gm.	87.2 percent

It can be easily realized, therefore, that two to four weeks of prolonged intra-uterine life is of great importance in reducing the mortality. It is also to be remembered that the younger the fetus the graver the danger of intracranial hemorrhage.

Obstetrical Analgesia: Any analgesic given to the mother affects the baby to some degree. Irving in a study of 500 consecutive deliveries where no anesthesia was used, found only 10 per cent. of the babies required resuscitation. In a series receiving scopolamine-morphine he found 60 per cent. had to be resuscitated, and in a group in which phenobarbital was administered 40 per cent required resuscitation. These figures refer to a study of deliveries of full term infants. One can easily realize the increasing danger from various analgesics given in excess to the mother in the case of the prematurely born infant.

Immediately after respiration has been initiated in the infant suffering with extreme narcosis, oxygen or oxygen-CO_2 therapy should be instituted.

Provision for the Premature Delivery: In case of expected premature labor immediate preparation should be made for the reception of the infant into a proper environment. The preparation should not be delayed until labor has begun, otherwise many viable premature infants will be lost. If the proper facilities cannot be furnished in the home the mother should be persuaded to enter a hospital before confinement.

Preparation for the proper conduct of labor should be complete, whether in the home or hospital. The mother should be prepared with great care and every effort made to conduct an aseptic labor. The room should be selected and equipped to meet the needs for labor and the requirements of the infant. It should be well ventilated and properly heated to at least 70 degrees F.

Avoidance of mechanical trauma incident to delivery, chilling of the infant, and exposure to infection are important factors in reducing mortality.

Initial Care: A warm sterile pad, towel, or preferably a blanket should be in readiness to receive the infant. As soon as the head is born the face and eyelids should be gently sponged with sterile gauze and the mucus should be removed from the air passages by carefully wiping with sterile gauze. Upon delivery of the body the infant and the cord should be protected from contact with feces and other foreign matter. The infant should be placed so that the head is dependent, allowing the mucus and secretions, which may have accumulated in the respiratory passages, to escape.

Tying and Section of the Cord: The time elapsing between the birth of the infant and the tying of the cord will depend on the general condition of the infant and to some extent on the obstetrician's ability to prevent chilling of the infant. In the absence of marked asphyxia it is well to allow the pulsation of the cord to become weakened or to disappear before ligation. This usually requires from one to five minutes, during which time the infant will receive from 30 to 60 cc. of blood from the placenta. This blood should be conserved when possible without risk.

The cord should not be tied too closely to the skin. Great care must be exercised in tying the cord to prevent severing it with the ligature which is easily accomplished in the premature. The cord should be sufficiently long to allow for a second ligature.

The possibility of asphyxiation of the premature infant must be borne in mind throughout

the entire labor. Any accumulation of secretions or aspirated material should be removed by inverting the child and gently wiping the mucus from the throat or by aspiration by means of a catheter. In the more extreme degrees of asphyxia a warm bath and the institution of artificial respiration by regular and gentle compression of the chest followed by the administration of oxygen may be necessary. Swinging and other forceful methods of inducing artificial respiration must never be practiced.

The irritation of the catheter in the pharynx will frequently reflexly stimulate respiration. If the infant appears to be recovering spontaneously it should be left alone.

Administration of oxygen, about 120 bubbles per minute, may be of value if administered through a catheter inserted in the nose or mouth, or through a properly constructed mask. If an oxygen chamber is available the child should be placed in an oxygen air mixture of 40—50 per cent. oxygen.

All premature infants, whether or not showing signs of asphyxiation at birth, should be carefully watched for cyanotic attacks during the first days of life, as such attacks may develop suddenly and without warning. They may be due to a defective pulmonary circulation, a congenital atelectasis, or intracranial hemorrhage. At other times they are precipitated by intra-abdominal distention interfering with cardiac or respiratory action. Oxygen therapy offers the best single method of resuscitation.

Neonatal Initial Care—Care of Mouth and Nose: Every effort must be made to avoid trauma of the mucous membranes of the nose and mouth because of the danger of secondary infections. Much can be accomplished by placing the child with the mouth downward or laterally with trunk elevated for a few hours, so that the mucus can gravitate toward the nose and mouth.

Care of Eyes: One per cent. silver nitrate solution or 25 per cent. argyrol should be used to prevent ophthalmia neonatorum. The nitrate of silver solution should be neutralized with a normal saline solution. Not infrequently the application of silver nitrate will result in some inflammatory reaction of the conjunctiva in the first 6 to 12 hours after its application. This is especially frequent in premature infants and is relieved by cold applications. This is not to be confused with the more serious specific ophthalmia which may develop on the second or third day. In all cases of doubt a microscopic examination of the purulent discharge must be made. An old silver nitrate solution which has undergone decomposition should be avoided, as such solutions are far more prone to irritate the sensitive conjunctiva.

Care of Skin and Genitalia: It is of the greatest importance that premature infants shall be handled as little as possible. At Cook County Hospital during the past year we have not bathed or oiled the infants during their first week, having adopted the plan introduced by Sanford of allowing the vernix caseosa to remain on the infant, simply wiping the region of the eyes and buttocks with sterile water. Since the introduction of this plan there has been a minimum evidence of skin irritation and no cases of impetigo. Others may prefer a mineral oil cleansing, or, in case of larger infants, a soap and water sponging.

Daily Routine: The body temperature must be taken through the rectum and should be recorded morning and evening. An individual thermometer should be furnished for each infant. Undue exposure and trauma should be avoided from the moment of birth. Fluctuations in body temperature are more marked than in the full-term infant, with a tendency toward hypothermia. A minimum of 96 degrees F. should be considered the lowest compatible with progress. Attempts should be made to limit the daily fluctuations to 1½ degrees F.

The temperature of the heated bed should be varied with the needs of the individual infant. Small prematures and congenital weaklings with marked hypothermia should temporarily have a surrounding temperature varying, from 85 degrees F. to 95 degrees F. Older and stronger infants are better placed in a bed at 80 degrees to 85 degrees F. As the infant develops its vital functions and the subcutaneous fat increases, the temperature of the bed should be gradually lowered to that of the nursery, which should be kept at about 75 degrees F.

Removal from the bed should follow definite indications. Changing napkins and the ordinary routine measures can be carried out in the bed.

The body must be insulated by proper clothing which will be described.

The body fluids, after the first few days, must

be maintained by an intake of from one-eighth to one-sixth of the body weight in fluids in 24 hours, and this must include a caloric intake of more than a sustaining diet, 70 calories per kg. after the first few days of life.

Respiratory and circulatory functions must be protected and at times stimulated.

Hyperpyrexia frequently results from an overheating of the bed, and when a high temperature is noted the temperature of the bed should be considered as a possible cause.

Infections of all kinds tend to the development of fever, but, on the whole, the reaction is less than in the full-term; however, the exception may be true. Massive pneumonias have been found at autopsy which were unassociated with temperature above the average normal.

Weighing should be done with a balance scale at a specified time each day as part of the general routine. The infant should, unless contraindications exist, be undressed for the purpose, and weighing is best done before the bath.

Those fed at the breast must be weighed before and after nursing, and the food taken should be recorded.

Loss of body-weight during the first days of life occurs almost constantly in premature infants, the percentage loss being greater in the premature than in the full-term infant, and on the whole, they are much slover in regaining their birth weight.

Most infants regain their birth weight by the eighteenth to the twenty-first day, with a daily gain averaging from 10 to 30 gm. (⅓ to 1 oz.) after reaching their lowest weight, which is usually about the fifth day. Infants under 1500 grams may be considered as growing satisfactorily on an average daily increase of from 10 to 20 grams (⅓ to ⅔ ounce). They will often double their birth weight in 75 to 90 days. Those from 1500 to 2000 grams usually double their birth weight in from 60 to 75 days.

Infant's Clothes: The wardrobe should be planned and completed in advance of labor. In emergencies this may not be possible. It is imperative to remember that preservation of body heat must be begun immediately after birth on the confinement bed itself.

Temporary Clothes: At birth the infant is received into a warm blanket and immediately placed in a heated basket or heated bed.

In supplying external heat it should be remembered that these infants are easily burned, and such burns are usually fatal.

In small prematures for temporary emergency, a sterile cotton-pack which completely envelops the infant, except for the face, may be applied. It should, however, be remembered that cotton is far inferior to wool in prevention of heat radiation. An improvised jacket, preferably of flannel, may be placed on the outside of the cotton to hold it in place.

To the cord, genital regions and anus, an easily changed pad of cotton or gauze combination may be applied. Whenever the infant becomes soiled, it is necessary to change the pad. This should not be neglected.

Permanent Clothes: In a well-equipped station several sets of special clothes should be provided. These should be kept sterilized in packets.

With the open type of heated beds, all garments next to the body, except the napkins, should be made of light-weight flannel.

Care in the Home: The establishment and maintenance of properly equipped hospital stations are essential to the lowering of mortality, more especially in the larger cities and particularly among the proper classes. A careful consideration of the requirements for the results to be expected from their care in the home is equally essential and good results can be obtained.

In the care of these infants at home the same rules for asceptic nursing, maintenance of body temperature, breast feeding and daily routine must be maintained, as suggested for hospital care.

When a bathroom is available only one other room need be supplied.

While the baby is being dressed or bathed the nursery or bathroom temperature should be in the neighborhood of 80 degrees F. A gas or electric stove will be of assistance in accomplishing this. When a heated bed is in use the sleeping room may be kept between 70 degrees and 80 degrees F., varying with the indications for the individual infant. It should be clearly understood that all visitors other than the attendants and physician must be excluded. Gowns and masks safeguard against infection.

Hospital Nursery Units: Special equipment is necessary, whether they are to be cared for in

the obstetrical or children's divisions of a general hospital. The lack of proper arrangement for their care in general hospitals throughout the country represents a striking lack of foresight.

The equipment to be recommended is to a large extent dependent upon the method which is to be used for maintaining the body temperature of the individual infant.

1. Special nursery units in which ventilation, temperature and humidity are automatically regulated.

2. Ordinary hospital nurseries in obstetrical or pediatric departments in which the room temperature is fairly constant but which are without special means of ventilation and humidity control.

In wards of the second type individually heated beds must be supplied for the infants. They are also necessary for a limited number of the infants cared for in wards of the first type, as the smaller and more frail infants require a higher surrounding temperature than the larger and more matures ones. A combination of the superheated, regulated room with special beds for the exceptional infants is a combination to be desired.

Only a limited number of institutions have as yet air-conditioned units so constructed as to meet the requirements of these small infants for the preservation of their body temperature, to maintain an optimum humidity and to provide a constant and definite change of air. The construction of such a series of rooms to meet the requirements for normal and infected infants requires a considerable expenditure. The Boston and Yale Children's Hospitals have such rooms in successful operation.

Many new units for air-conditioning are being introduced which, however, vary greatly in their efficiency. It is to be remembered that maintaining and controlling temperature and humidity during the different seasons of the year offers a most serious obstacle to popularizing automatic control. This applies more especially to the summer months.

Blackfan and Yaglou believe that the humidity best suited for stabilizing the body temperature of premature infants should approximate 65%, with a room temperature of 75 degrees to 80 degrees F. In the Sarah Morris Hospital, where no attempt is made to automatically regulate humidity, it varies more often between 40 and 55%. During the winter months, more especially, it is at times necessary to raise the humidity and this is accomplished by moistening sheets which are hung on ordinary ward screens. When the humidity is too high nurses not infrequently complain of personal discomfort.

Equipment of the Station: It has been our desire to demonstrate that the care of premature infants can be accomplished in a practical manner in any well-organized obstetrical department or children's hospital. A station should provide at least one or more rooms and as far as possible the following equipment:

Individually heated beds for small infants.
Bassinets for graduates.
Oxygen therapy units.
Heated dressing table.
Sink with bathing slab.
Shelves for toilet articles.
Supply closet.
Scale.
High and low temperature registering thermometer.
Hygrometer, wet and dry bulb type.
Time clock, for recording time for feedings.
Electric heater for emergencies.
Screens.
Electric refrigerator.
Transportation ambulance for prematures.
Heated beds for home use (loaned to graduates for temporary use).
Ultra violet-ray lamp.
Electric breast pump.

Nursing Staff: The selection of a personnel for the nursing staff of a unit established for the care of premature infants requires great care. Nurses assuming these responsibilities must be intensely interested in their work. They must be willing to make many necessary sacrifices while the infant is passing through the critical stages. They must, at all times, be prepared to meet the emergencies of asphyxia and to counteract the spells of cyanosis. These two factors in themselves require almost constant vigilance, otherwise, the work of previous days will go unrewarded. They must use good judgment to prevent over and underfeeding, as to a very large extent the size of the individual meal will be governed by the physicial condition of the infant at the time of feeding. In no other class of patients is it so necessary to change or modify on short notice previous orders for diet. The nurse must know the indications for and the methods of administering catheter feeding, colonic flushing,

tubbing, and the application of artificial respiration.

In hospital words the constant changing of nurses, as is so frequently the case in meeting the curriculum for nurses' training in general hospitals, is found to be a great disadvantage. Better results are obtained when the nurse in charge has under her care assistants who need not necessarily be nurses in training, but preferably young women who are especially preparing themselves for the care of young infants, and who can be relied upon to stay in the station for long periods of time. Such women become expert in the handling of these infants, can frequently feed them with a minimum excitement of their pharyngeal reflexes, and soon learn to bathe and give them their exercise and massage, which is so essential to every infant in order to prevent "hospitalization."

The ideal nursing staff for such a station is, therefore, one consisting of a well-trained supervising nurse and a corps of assistants desiring this training, and who are willing to remain in this service for a long period of time, together with a limited number of nurses in training.

Clinical Records: A careful history is most important as much evidence which will have a direct bearing on the prognosis will frequently be elicited, as well as suggestions for feeding and therapy. The maternal history as to illness, previous pregnancies and their outcome must be elicited. The paternal history is also of prime importance. The presence or absence of acute illness in the home, more especially whooping cough, scarlet fever, diphtheria and septic infections should be investigated before the infant is discharged.

Home Instruction—Social Service: Every hospital record should show the data of at least two social service investigations. This, while usually neglected, frequently reveals conditions in the home which make the early discharge of these infants impossible if their lives are to be conserved.

The first investigation should be made in the shortest possible time after the infant enters the hospital and the last just previous to the infant's discharge.

A nurse should visit the mother usually within the first twenty-four hours after the infant is received and instruct her in the care and expression of her breasts so as to encourage her in maintaining her in maintaining a supply of breast milk. Regular four-hour expression is advised, the mother being supplied with sterile bottles so that she may send or bring her milk to the station. This stimulates the milk supply and encourages the mother in her effort to produce milk for the future use of the infant. As soon as the mother's physical condition permits she should be requested to come to the station at stated times to receive instruction in the care of her small infant, and to nurse it directly at the breast if its development warrants it. This is a valuable educational feature insofar as the infant is concerned.

Before the infant is discharged from the station the nurse visits the home and instructs the mother in the necessary preparation for the infant's return.

Following the discharge from the hospital the nurse should visit the home one or more times weekly, as may be indicated.

Wet Nurses. The wet nurses express their breasts at regular four-hour intervals, five times a day, with an electrically-driven pump, or by hand expression. If there is any doubt as to the quality of the breast milk it is boiled for one minute.

It is my belief that it is a great advantage to be able to feed raw breast milk. This is not difficult to accomplish in the home or in the hospital where the mother has an ample supply of breast milk or where it can be obtained from available wet nurses. Where the source of breast milk is open to question it must be boiled. A freezing process similar to that used for holding ice cream is now available for this purpose. Freezing with dry ice results in minimum changes in the milk constituents. The small disc process which has been introduced in New York and is the one here alluded to, is not practical as now used where such large quantities of milk are required as in the case of Sarah Morris and Cook County Hospitals. For this reason we attempt to collect a milk as near sterile as possible.

In order to produce a maternal milk with as low a bacterial count as possible the wet nurse removes her outer clothing and dons a cap and mask, putting on a short rubber apron below the breasts. She then scrubs her hands and nails and a nurse cleanses her breasts with soap and water, after which the wet nurse cleanses her

own breasts with boric solution. When this is done she is assisted by the nurse in putting on a sterile gown with separate breast curtains. She then goes into the milk collecting room where her milk is collected in a sterile graduate and from this poured into graduated nursing bottles. The bottles are labeled and the milk is iced immediately. When larger quantities are to be preserved, the milk is poured into Mason fruit jars for fractional sterilization.

Diet of Nursing Mothers and Wet Nurses. Although the diet of a nursing mother of a full-term infant may, in many instances, be unrestricted, it is not so with the mother of the premature or the wet nurse who may be supplying the breast milk. The following articles of food should be excluded from the diet of the wet nurses: highly spiced or seasoned foods; fried foods; also cabbage, turnips, cauliflower, onions and sauerkraut. The following fruits are recommended: oranges, bananas and stewed fruits. Constipation should be relieved by diet, mineral oil, or enemas.

Gastric Capacity. In a postmortem study of 34 stomachs under pressure of a column of 15 cc. of water, the average size fetal stomachs was estimated as follows:

24 weeks..... 5 c.c.	32 weeks.....18 c.c.
35 weeks..... 8 c.c.	36 weeks.....25 c.c.
28 weeks.....10 c.c.	40 weeks.....45 c.c.

The stomach of the premature infant on a diet of breast milk is usually found empty at the end of one and a half to two hours. That of the artificially fed requires a considerably longer period of time, depending upon the nature of the food administered, even in the case of feeding with predigested milk.

Feeding Schedule. Human milk is the food of choice for the premature infant and this applies more especially to small infants.

A regular feeding schedule must be instituted. The feedings of necessity vary as to number and size as well as to the quality of milk mixture.

The following is recommended:

First 12 hours after birth: No water or milk is given.

Second 12 hours after birth: The following schedule can be instituted for most infants. The quantity may vary with the age and development of the infant:

13th hour	Boiled	water	2-6 c.c.
16th hour	Boiled	water	2-6 c.c.
18th hour	Breast	milk	2-6 c.c.
20th hour	Boiled	water	2-10 c.c.
22nd hour	Breast	milk	2-10 c.c.
24th hour	Boiled	water	2-10 c.c.

Infants received several days after birth, which is true of many cases, must, of necessity, be fed according to their condition when received at the station. The first few feedings should be minimum. Dehydration is often marked and demands special consideration.

Feeding from Second to Twentieth Day. For practical purposes, the second to the twentieth days may be grouped together as the second feeding period.

From the second day the infants should be fed regularly day and night, the number and times of feedings depending to a great extent on whether the food is given with or without the use of a catheter, on the gastric capacity, and on the infant's general condition. Practically all infants after the second day receive eight feedings daily.

Beginning (in most cases by the second day) with from 20 to 40 c.c. of human milk per kilogram (⅓ to ⅔ ounces per pound) of body weight, the quantity may be increased from 8 to 15 c.c. daily per kilogram (⅛ to ¼ ounces per pound) until, usually by the twentieth day, feedings averaging from 135 to 150 c.c. per kilogram (2 to 2½ ounces per pound) can be given.

TABLE I

BREAST MILK SCHEDULE FOR PREMATURE INFANTS

Day	2nd	3rd	6th	10th	20th
Per cent of Weight....	1/50	1/40	1/20	1/10	1/6
CC. per Kilo.....	20	25	50	100	180
Calories per Kilo.....	13	16	33	66	120
Ounces per Pound....	⅛	⅖	¾	1½	2⅔
Calories per Pound....	6	8	15	30	50

Small *increases* should he made daily if well taken.
Most infants can approximate these amounts.

TABLE II

BREAST MILK FEEDINGS DAILY

Weight of Infants..	1500-gms. or less	1500-2000 gms.	2000-2500 gms.
Second Day	20 cc.	30 cc.	40 cc.
Daily Increase	8 to 12 cc.	12 to 16 cc.	16 to 20 cc.

During the first days, further fluids, such as boiled water or one-half strength Ringer's solution are administered to compensate for the loss of body fluids through the kidneys, bowels, lungs and skin. The infant requires about one-sixth of its body weight of water, inclusive of

that contained in the milk, in 24 hours while in the heated bed. Such quantities, however, should not be attempted on the first days; usually it will be possible to approximate one-eighth of the body weight in total fluids by the fourth day. The early feedings must necessarily be small and the increased feedings given gradually. The infants must be considered individually, as it is impossible to formulate definite rules for feeding, at least during the first ten days.

Increases in food are based on the weight of the infant and the infant's food tolerance. The smaller and the more premature the infant the more slowly the feedings are increased. For any premature under 1000 grams the amount is never increased more than 1 c.c. at a time. Irrespective of the size of the premature, it is always started on a very small quantity and increased gradually, never over 3 c.c. at a feeding.

Overfeeding, either through too rapid administration, too large individual feedings, or too rapid increase in the day's food, should be as conscientiously avoided as underfeeding.

It is necessary to supplement the feedings by giving water or one-half strength Ringer's solution between feedings until the milk feedings total one-sixth of the body weight per day. In the presence of persistent vomiting it will be necessary to resort to subcutaneous administration of fluids.

Human and Lactic Acid Milk Mixtures. To increase the protein content of the diet skimmed lactic acid milk (buttermilk) is added to the feedings of many infants in proportions of one part skimmed lactic acid milk to three parts breast milk. The lactic acid milk used is prepared by the addition of a lactic acid bacillus culture to sterilized skim milk. Powdered skimmed lactic acid milk to three parts breast milk is well taken by older infants showing stationary weight. Whole lactic acid milk, cultured or powdered, may later be used to replace the fat-free lactic acid milk.

The diet of the premature infant making a satisfactory gain should not be changed arbitrarily without a well-defined indication.

After the twentieth day the food requirements of the infant are well established. A careful observation of the weight, stools, disposition and, what is equally important, its body temperature, will determine the future food requirements. The fluid requirement (milk and water) will, to a great extent, be governed by the temperature and humidity in the bed and room.

As the infant takes on weight and becomes fat, with a rounding of the features and the body, the total amount of the milk administered can be held at one-sixth, and, not infrequently, one-seventh of the body weight, and a normal increase in weight can still be maintained.

Artificial Feeding. Human milk is the natural food for the premature infant, for no other food can be fed to the same advantage. This is especially true of infants with a weight below 1500 grams.

All cow's milk mixtures ordered for the infant should meet the following requirements:

1. If fresh milk is used it should have been boiled for five minutes.
2. The mixture should have a low fat content.
3. It should precipitate with a fine curd.
4. Added carbohydrates should be increased more or less gradually from two to six per cent.

Many varieties of artificial diets have been suggested by different clinicians, such as simple milk dilutions, skimmed, evaporated, condensed, dried, rennet or reconstructed (similac, olac) and lactic acid milk preparations. To these mixtures carbohydrates are added. The results with these different milks are to a great degree dependent upon the physician's intimate knowledge and directions for the use of the individual food.

It should be remembered that the figures quoted for the feeding on breast milk are the maximum that can be assimilated and they may be excessive quantities for artificial feeding in the first weeks of life. When artificially fed these infants must at all times be closely watched for evidence of overfeeding, and the first evidence of digestive disturbances or of intercurrent infections should be taken as an indication for the feeding of human milk, whenever possible.

From the foregoing statement it is evident that slower increases in weight may be expected of the artificially fed.

Rennet Milk is prepared as follows: Whole cow's milk is boiled for five minutes, then cooled to between 104 degrees F. and 108 degrees F. It should be tested for temperature with a dairy thermometer. One rennet tablet (softened in a tablespoonful of cool, boiled water) or one

level teaspoonful of chymogen (Armour Co.) should be added for each pint of cow's milk used. The milk is then gently stirred for one minute.

The milk should be allowed to stand until it is well clabbered which takes from five to ten minutes. Then it should be beaten well with an egg beater which has been sterilized, until the milk is divided finely enough so that it will pass easily through the holes in the nipple. If it is not well beaten the milk will be lumpy. If boiled water is added to the milk it must be cooled before it is added otherwise large curds will form. The sugar may be added to the water used to dilute the milk. If the milk is not to be diluted then add the sugar directly to the milk. It may be necessary to enlarge the holes in the nipple moderately. Clumping will result if the milk is overheated at the time of feeding. Rennet milk has been the food of choice for many of our infants when breast milk was not available at the time of graduation from the station.

Lactic Acid Milk may be made from whole or skimmed milk as indicated. If cultured it is prepared by adding lactic acid bacilli to pasteurized or boiled whole or skimmed milk.

Powdered lactic acid milk is prepared by mixing one level tablespoonful of powdered whole or skim lactic milk with each two ounces of cooled boiled water. It is to be beaten with an egg beater to insure a smooth mixture. Carbohydrates are to be added in amounts as ordered.

Prophylactic Foods and Therapy. To counteract the loss of Vitamin C in milk through boiling, the feeding of orange juice should be instituted by the third week. Beginning with five drops daily the amount should be gradually increased to one or two tablespoonfuls, twice daily, by the end of the eighth week.

Cod liver oil, as an antirachitic, should be started by the end of the third week, beginning with two drops daily, and increasing to sixty drops daily by the eighth week. It is best divided in two feedings. Halibut liver oil and viosterol or the newer fish oil concentrates can be used, starting with two drops daily and increasing to 10 or 15 drops daily by the eighth week.

To meet the iron requirements of these infants raw egg yolk is added to the diet of both breast and artificially fed infants in the amount of one yolk to each quart of milk. One grain (0.06 Gm.) daily of carbonate of iron or iron and ammonium citrate may be used. Liver in combination with iron is a good preparation. Each level teaspoonful of the Lilly's formula contain approximately 3.75 Gm. (58 grains) of liver fraction, and 0.65 gm. (10 grains) of ferrous ammonium citrate. The initial amount should be ¼ Gm. (4 grains) daily, and increased up to 4 Gm. (1 dram) daily in older infants. Either the egg yolk, iron, or liver preparations should be introduced into the diet by the fourth week.

As early as the third week our infants are exposed to ultraviolet rays by use of a quartz lamp. The time of exposure varies with the indications in the individual case. At first these exposures should be limited to 15 seconds, and it is rarely necessary to give more than two-minute exposures three times a week. Over-exposure may result in irritability, vomiting, and increased body temperature. The exposure also varies with the amount of cod liver oil or other antirachitic oils prescribed.

DISCUSSION

Dr. S. C. Henn, Chicago: It seems to me that the care of prematures has been adequately covered. The thing that pleased me most has been the use of oxygen.

Dr. Krauss asked Dr. Hess one question and I have one idea. I wonder if the reason they get flat heads is because of the turning of the baby toward the light.

Dr. J. P. Coughlin, Chicago: Dr. Hess enumerated nine methods of resuscitation. I have often seen these nine and more tried in fifteen to twenty minutes. Yearly I have had an opportunity to see about 100 newborn babies within the first few hours of life and I feel that one of the greatest causes of failure is hurry to do something or do a lot of things right away. I have been impressed by the fact that few interns realize the importance of carefully clearing out the air passages.

There is another interesting thing. Dr. Hess wonders why the birth rate has decreased from 19 to 14 per 1000. Twenty years ago they were not interested in birth control, or if they were they were very surreptitious about it. I think the fact that this large group of people is studying rhythm explains why our birth rate has dropped off. These people were very prolific and they did limit their families as they do now.

Dr. M. L. Blatt, Chicago: Nothing so clearly shows the necessity for teamwork as the work that Dr. Hess has done with premature infants. It takes leadership, and in Chicago Dr. Hess's influence on the care of prematures has been outstanding. Those of us who have had anything to contribute have contributed as a part of his team. There are a few minor variants from what he has done and I should like to mention

them to you. They agree in general with most of his precepts.

I think it is important to recognize that an infant under five pounds in weight is a small baby. It is physiologically less adequate than the mature infant. As Dr. Parmelee has said, the alveoli are not well formed and the liver function is deficient. Dr. Hess has shown you that the cardia is wide and the pylorus narrow.

Prior to Sanford's demonstration of the possibility of not cleansing the newborn baby we used to clean our prematures. We have not done this for a long time and thereby avoid reduction in skin temperatures. These babies cannot generate heat well. I do not believe Dr. Hess stressed the fact that we do not put much clothing on the babies, but instead place covering on the outside of the incubator. The infants are in a shirt and a diaper; the blanket is outside the incubator. I remember when I was taught the care of the premature they were wrapped in cotton and then practically buried in covers.

The ease with which a premature may be exposed and its attendant dangers are well recognized. Overheating may just as easily occur. Recently we acquired a few new heated beds and once I found a 50 watt light in every bed when they should have had a 25 watt. You cannot overheat these infants without doing harm.

Another thing that is important is the primary need of the cells for oxygen before they can be stimulated by carbon dioxide. On that account we believe we do better with oxygen alone than with carbon dioxide which I know many of you are using.

We have not given additional iron to prematures for four years. Instead we give whole blood in the buttock every other day. We believe that by doing that we give an adequate amount of iron and in addition we increase their immunity to the upper respiratory infections to which they are so prone. We are using in preference to mother's or father's blood, the pooled blood of pregnant women. We believe that this blood contains certain endocrine factors which are of value to the premature infant. This we have not as yet proved.

We still prefer hand pumped, unboiled breast milk for these infants. There are two reasons why we prefer raw human milk: First, because the proteins and carbohydrates are those natural to the child, and second, there exists in human milk certain bacteria which are advantageous in the digestive tract of newborn infants. Hand expressed milk has a much lower bacterial count than that obtained with a breast pump because with a pump the expressed milk contacts a large area of skin. With hand expression the milk is expressed directly into a cooled vessel. At the County Hospital we are collecting enough breast milk so that every newborn infant gets a feeding of breast milk the first two days of life. In this way we are implanting in each gastrointestinal tract the organisms that are normally found in the breast fed infant. If they are not to be breast fed they are then put on artificial feedings.

Dr. Julius H. Hess, Chicago (closing): As to the question of flat heads, many are due to intra-uterine positions of the infant. Others are caused or aggravated by postnatal posture. These heads are soft; the membranous portion of the skull is in excess as compared to the osseous. The infant's position should be changed at regular intervals.

As to the question of resuscitation, I do not want to repeat but I am in agreement with everything that has been said. The greatest danger is in doing too much. That applies not only to resuscitation but to spinal puncture as well. We had a resident who spent a year in our department, spending much time in a study of the results in spinal punctures on prematures. He found that in the average premature, using a small (25 gauge) needle and with the baby held in a sitting position, he could get from one to three c.c. of spinal fluid. If there is a hemorrhage in the brain, removing this amount of spinal fluid will not relieve the pressure very much, and as a diagnostic procedure it is not reliable. If the hemorrhage is low down in the base you may get blood, but if it is higher up you may get clear fluid or nearly so. A few red cells in the spinal fluid we considered as physiologic. Some capillaries usually rupture as a result of the change in pressure which comes from the release of the infant's head as it leaves the pelvic canal, also from pressure while still in the canal.

I do not want to leave the impression that all prematures should be treated in a hospital. I do not believe our results are better than those in the home where there is provision for good care. The doctor really does not have much to do with their care. They require proper food, good nursing care and much good judgment. The babies we receive are largely those who cannot stay at home.

The recent epidemic at St. Elizabeth's Hospital has indeed resulted in something that is going to be beneficial to the people of Chicago. Some of those regulations are very strict but if they are administered with good judgment it will reflect to the advantage of the infants. The obstetricians will recognize that there is an infant problem earlier than they have to date.

Coming down on the train I came in with a man who is connected with the State Board of Health, who said that they are preaching "every doctor's office a welfare center," and I feel every hospital should be a "teaching center." We have been interested in refresher courses. We know that when we give a course we see the same faces; those fellows who need it least and who are the best men in the territory. Other men who really need the instructions do not go, and the only way you can pick them up is at the local hospital. I think, therefore, it is the duty of the obstetrician and those having to do with the care of infants to try and teach the men the better handling of infants in their own communities and hospitals.

CYANOSIS IN THE NEWBORN

A. H. Parmelee
OAK PARK, ILL.

Cyanosis is a symptom. It signifies anoxemia and is the commonest of all signs of neonatal disease. The complex mechanism of respiration, and that of the closely related circulatory system must be quickly adjusted to meet the conditions of extrauterine life. Any hindrance to this adjustment is a hazard to the life of the infant, therefore, cyanosis is a symptom that demands serious attention. In eighty-five per cent. of the deaths that occur in the neonatal period cyanosis is a prominent symptom.

Deaths from all causes during the first month of life comprise about one-half of the deaths in the first year, and about three-fourths of these occur in the first week. These facts indicate that antenatal and natal factors are the most important causes of mortality in the newborn period. The reduction of this mortality, therefore, while it is essentially an obstetrical problem, requires the closest cooperation between the obstetrician and the pediatrician.

Cyanosis in the newborn may be the result of disturbances affecting primarily the respiratory system, the circulatory system, or the medullary centers in the central nervous system. Respiration and circulation are closely related functions and each is controlled by vital centers in the medulla. The normal functioning of any one of these three systems is so dependent upon the integrity of the other two that it is often quite impossible to determine the primary cause of cyanosis except by eventual postmortem examination.

A probable diagnosis can, however, be more intelligently made by a study of the statistics of postmortem findings in infants dying during the neonatal period. Cruickshank made a classification of the causes of neonatal death based on eight hundred autopsies. He found that in 67% death was due to what he designated "birth effects" (asphyxia, atelectasis, injuries and prematurity). Thirty per cent. showed infective conditions as the cause of death, and grosss congenital malformations accounted for the remaining three per cent. In nine-tenths of the large group 67% classified as birth effects, death occurred in the first week of life, and practically all of them showed signs of asphyxia. In the group classified as infective conditions 30%, pneumonia was found in eighty-three per cent. A large number of these are due to the indirect effects of birth. Factors which predispose to atelectasis and asphyxial conditions in general, such as birth trauma, prematurity, and narcosis, produce favorable ground for the development of pneumonia.

Hunt analyzed one hundred eighteen postmortem examinations with respect to the frequency of the pathologic lesions causing cyanosis in the newborn. Intracranial lesions, including both meningeal hemorrhage and severe tentoral tears were the most frequent. The symptoms appeared early in these cases. The most common single lesion found was pneumonia. Presence of a hyaline membrane on the bronchial and bronchiolar surface due to aspirated amniotic sac contents was relatively common; it was associated with persistent cyanosis. Congenital heart disease was an uncommon cause, and other causes, such as septicemia, diaphragmatic hernia, and meningitis, were relatively rare.

With these facts in mind, we shall be better able to evaluate the relative importance of the various causes of cyanosis which will be discussed later.

First, we should go into the matter of the mechanism by which respiration is initiated. Respiratory activity begins, under normal conditions, almost simultaneously with the birth of the infant. It is generally conceded that the initiation of respiration is due to stimulation of the respiratory center and that CO_2 is the chief stimulant material. But the factors which govern the action of the stumulus are not well understood, and, in consequence, the explanations of the disturbances of respiration are not clear.

Schmidt says that the chief element in the chemical regulation of respiration is the concentration of the stimulant material within the cells of the respiratory center. This, he says, is dependent upon a balance among three factors: The concentration of the stimulant material in the arterial blood, the rate at which stimulant material is produced within the cells of the center, and the rate of blood flow through the center which determines the extent to which stimulant material can accumulate there. That the respiratory center is influenced directly by changes in

its blood supply, and that respiratory response to changes in systemic blood pressure depends chiefly upon changes in cerebral blood-flow have been experimentally proven. Normally, an increase in cerebral blood-flow depresses, and a decrease stimulates respiration. This suggests that products of metabolism of the cells of the center play a part in regulating the activity of the center. But there is an abnormal condition of the center in which respiration is depressed by a decrease in its blood supply, and stimulated by an increase. This abnormal state of affairs is spoken of as the "reversal." Apparently the ability of the respiratory center to respond to stimuli depends upon a supply of oxygen adequate to support the metabolic processes upon which the functional activity of the cells depends. Any agent normally a stimulant to respiration may, according to Schmidt, cause depression or failure if applied in the presence of oxygen-lack in the brain consequent upon subnormal cerebral blood-flow. All of this meanss, briefly, that the cells of the respiratory center do not respond normally to stimulation unless they are healthy, and their health depends largely upon an adequate supply of oxygen. Conditions favoring either local intracranial stasis or general anoxemia will, therefore, decrease the excitability of the respiratory center and interfere with normal respiration.

Fetal respiratory movements in utero have been demonstrated in experimental animals, and almost certainly take place in the human fetus. This indicates that the mechanism by which respiration takes place is already in existence before birth and will function after birth unless disrupted by the circumstances of birth or subsequent events.

Let us now take up the causes of cyanosis in the newborn. They may be classified, after the method of Bonar, under three main subdivisions: Those affecting the respiratory system, those affecting the circulatory system, and those affecting the central nervous system.

A. The respiratory system: 1. *Obstruction to the upper air passages.* This is most often due to the aspiration of amiotic fluid, mucus, blood, etc., but occasionally is due to extreme pressure on the trachea from tumors, such as a large lymphangioma (hygroma cysticum colli), a congenital goiter. or extravasation of a large amount of blood into the soft tissues from trauma.

2. *Faulty alveolar inflation.* Under this heading, *atelectasis* assumes a dominant place. The lungs of the normal full-term infant undergo gradual inflation during the first few days of life and, therefore, there is present in all normal newborns a variable amount of initial atelectasis during this time. This can rightfully be called "physiologic atelectasis of the newborn." Various hindrances to the respiration may result in the persistence of atelectasis to a pathologic extent. The main factors preventing the initial normal expansion of lungs are: a) Cohesion of the moist surfaces of the air passages in collapsed and airless lungs. This initial resistance of the atelectatic lungs to expansion is always present and contributes to the maintenance of atelectasis to a pathologic extent when combined with any of the following factors. b) An imperfectly developed, or an injured respiratory center. c) A poorly developed thorax (seen especially in premature infants). d) Bronchial obstruction due to the aspiration of foreign material. In regard to this latter factor, it is believed by some that the aspirated amniotic fluid gives rise to a prolonged catarrhal secretion, and that this amniotic mucus is more important in causing obstruction than is the original material aspirated. This is especially true if the cough reflex is insufficient. There are also secondary types of atelectasis. Resorption atelectasis, for example, in which areas of lung that have been inflated become obstructed, due to some hindrance to normal respiration, and the alveoli collapse as the air is resorbed from them. Some believe that primary atelectasis, even in the premature infant, is comparatively rare, and that a secondary type is much more common. Farber and Wilson also describe in the lungs of premature infants solid areas of parenchyma, superficially resembling atelectasis, but not a true atelectasis because they are uninflatable areas of immature and incompletely developed lung tissue. *Emphysema* may also result from the aspiration of foreign material. This is due to the fact that some bronchioles are only partially obstructed, permitting air to enter, but hindering its exit; the air thus trapped gradually over-inflates the affected lobule. When this phenomenon occurs at the periphery some of the air cells may rupture and

allow air to escape into the pleural cavity, producing a pneumothorax and collapse of the lung. It has been shown that some degree of pneumothorax occurs in approximately one per cent. of all newborns. *Edema, hemorrhage, and exudates* are especially likely to occur in the lungs of premature infants and interfere with normal functioning.

B. The circulatory system: *Congenital heart lesions* are sometimes the cause of cyanosis, but the incidence of such lesions is relatively rare. When cyanosis is present soon after birth, is persistent and increases when the infant cries, the heart should be suspected of being defective. More frequently, the increased load put upon the heart because lack of proper inflation of the lungs interferes with normal pulmonary circulation, causes gradual but progressive fatigue of the heart muscle. This increased load, especially upon the right side of the heart also causes the foramen ovale, which had been functionally but not anatomically closed, to reopen, and also interferes with the closing of the ductus arteriosus. In this way the heart reverts to its fetal type of circulation and we have what has been termed *"severe mixed-blood cyanosis."* When the conditions within the lungs again become normal the cyanosis will disappear, and also the murmurs that may have been heard will disappear. *Local cyanosis* or *local asphyxia* due to angioparesis is not infrequently seen when there has been prolonged local stasis in a part, as in a prolapsed arm or a leg. This condition is sometimes seen in the face or may involve most of the head, the rest of the body being normal in color. It is due to local vasomotor paresis, and clears up spontaneously in a few days.

C. The central nervous system: *Depression of the medullary centers* may be caused by 1. *intracranial injury,* especially if hemorrhage occurs. *Infratentorial hemorrhage* if profuse, as from a tentorial tear, usually causes asphyxia from which the infant does not recover. *Supratentorial hemorrhage* may not cause symptoms for several hours or even days, and cyanosis may be due to generalized convulsions or to depression of the centers from general increased intracranial pressure. Hemorrhage or general inteference with cerebral circulation will cause local anoxemia and destroy the ability of the respiratory center to respond to normal respiratory stimuli.

2. *Drugs and anesthesia* given to the mother during labor have a definite effect upon the vital centers. Various anesthetics given to pregnant animals will depress or may even stop the normal intrauterine respiratory movements of the fetus. It has also been conclusively shown that morphine given to the parturient mother within three hours of her delivery depresses the respiratory activity and causes asphyxia of her child.

Cyanotic attacks occur with much greater frequency in premature infants, largely, of course, due to the immaturity of their vital centers and the physiologic immaturity of their tissues in general, manifested by their special tendency to edema and to hemorrhage. Frequent cyanotic attacks in the first days of the life of the smaller premature infants demand constant vigilance on the part of their attendants to keep them alive. Not infrequently we see also, in premature infants, the recurrence of cyanotic attacks in the second or even the third week of life, after there had been a period of normal progress. These late attacks of cyanosis are not easily explained. Probably some are due to intracranial hemorrhage, but others can only be explained as the result of fatigue of the respiratory and perhaps of the cardiac musculature.

Treatment. a) *Prophylaxis or prevention* is, of course, the most important and most effective method of treatment. 1. *Prevention of prematurity* comes first in importance because the more mature the infant the greater his ability to adjust himself to extrauterine life. 2. *Better obstetric judgment and technic.* 3. *Good judgment in the type and method of administration of anesthesia.* 4. *Avoidance of opiates and barbiturates* near the time of delivery. b) *Active treatment.* According to Seitz, three and one-half per cent. of all infants are born in a state of deep asphyxia. This means that every obstetrician should be prepared to give proper emergency care to these infants. One important consideration in the care of the asphyxiated infant is that *chilling must be avoided.* Before any method of resuscitation is undertaken it is essential that foreign material, which may be obstructing the air passages, be removed by means of a soft rubber catheter or a bulb syringe. If you are adept in the use of the tracheal catheter it can be used to great advantage, but should not be used by a novice. Body manipulations are, as a rule, more likely to do

harm than good, and, except for the very gentlest manipulation, should be avoided. Temperature stimulation when performed in the proper manner has some value as a resuscitating measure. The infant should *never* be dipped in cold water, however. Mouth to mouth insufflation is an old and valuable method; its chief drawback is the danger of bacterial contamination of the infant's respiratory tract. The administration of oxygen, or of carbon dioxide and oxygen mixtures, is now more commonly in use in hospitals than any other method of resuscitation, and its life saving value is unquestioned. Whether the addition of carbon dioxide is an improvement over the administration of oxygen alone in combating asphyxia of the newborn is still a question in the minds of not a few. Mechanical respirators are not now as popular as they were a few years ago. They are expensive and by no means indispensable, and also there are certain dangers connected with their use, which makes the advisability of their general use questionable. No medical stimulants have survived the test of time and it is not wise to recommend any for general use.

Oxygen inhalations are also of great value in many instances in the treatment of cyanotic attacks due to other causes. In the premature infant oxygen can be given to advantage periodically for days or even weeks.

Detailed instructions for treatment have been purposely avoided in this paper, because mortality in the newborn period will not be reduced by memorizing certain technics of treatment, or by the use of a particular gadget or apparatus, but much more by closer study of the newborn infant, and greater familiarity with the physiology and pathology of this important period in the life of the human organism.

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DISCUSSION

Dr. Carl E. Sibilsky, Peoria: Dr. Parmelee has given us a stimulating discussion on this important subject. The importance and seriousness of cyanosis as a symptom is appreciated when one considers the frequency with which it occurs in a variety of conditions. He did not say anything about treatment—purposely as he stated.

There are some general principles to be observed in the treatment of cyansois, regardless of the cause or condition being considered: 1. The air passages must be clear before attempting respiration; 2. the body heat must be maintained; 3. handling of the infant must be gentle.

Physically, the newborn may be easily injured, and especially the premature. Therefore, gentle handling must be observed to avoid injury to the extremities long bones and soft tissues; avoid crushing injury by manual respiration movements due to awkward or too rapid methods of resuscitation. Rupture of the air cells may occur as a result of too sudden increase in air pressure. Unnecessary handling may only exhaust the infant.

Preserve the body heat by avoiding long and undue exposure from the time of birth to placement in a warm bassinet or incubator where the care of the skin, eyes and cord can be attended to as well. This will prevent chilling.

Clear the air passages before any attempt at respiration is made. This should be done immediately the head is delivered. The mouth, pharynn, larynx and nose should be cleared of mucus, amniotic fluid and blood to avoid aspiration of this material with the first sudden inspiration as a result of the sudden change of temperature from the intra-uterine to extra-uterine life. Asphyxia and pneumonia can be reduced because of these precautions.

After the air passages have been cleared, oxygen with five per cent. carbon dioxide or oxygen alone should be administered. True cyanosis means, or implies, anoxemia; therefore, oxygen is needed. There is the controversy between those who do and those who do not use the carbon dioxide combination. Both methods seem to work. However, it is conceded that carbon dioxide is the respiratory stimulant and carbon dioxide is carried from the tissues to the center in the brain by the blood stream. Asphyxia means low oxygen and low carbon dioxide content of the blood and tissues; therefore, the combination would appear to be the choice in routine procedure. Mouth to mouth insufflation is a valuable respiratory stimulant if the gas combination is not readily available.

Respirators are not available to those of us outside large medical centers.

For atelectasis, oxygen and carbon dioxide periodically and stimulating the infant to deeper respiration occasionally are indicated. This is accomplished by making the baby cry.

If the cyanosis is due to intracranial hemorrhage oxygen and carbon dioxide should be given; the infant should be kept warm and handled as little as possible. If there is evidence of increased intracranial pressure, as bulging fontanelle, cistern puncture or lumbar puncture should be done to reduce the pressure. Intramuscular administration of father's blood should be resorted to in arresting the hemorrhage.

For congenital heart disease little can be done other than the occasional stimulant and avoiding unnecessary handling.

Cyanosis due to tetany is treated by the administration of calcium gluconate intramuscularly and orally.

Cyanosis due to pneumonia is treated with oxygen and carbon dioxide. There must be considered changes of position and other supportive measures.

Dr. A. H. Parmelee, Oak Park (closing): I should like to make a few remarks in regard to what Dr. Sibilsky said about the relative value of oxygen alone and carbon dioxide with oxygen. That is a question that is still not settled, and it may not be settled for some time. Eastman showed that the carbon dioxide concentration in infants' blood was much higher than in mothers' blood, and it would not seem that more carbon dioxide would be necessary. It is more important apparently in this type of cyanosis due to asphyxia that oxygen be supplied so that the respiratory centers will be more sensitive to the carbon dioxide that is already present. That is the view that seems most in favor at present.

Dr. Minsk has said one thing which I think we all should keep in mind: that convulsions sometimes are due to anoxemia and convulsions may occur without any actual damage to the brain and are due purely to anoxemia. We have seen children with congenital heart conditions with sudden attacks of cyanosis and convulsions probably due to the anoxemia.

Dr. Minsk also said that cohesion of the moist surfaces of the air passages is not a serious cause of atelectasis. That is true in itself but, as I said in the paper, this cohesion plus other factors, such as weak musculature and poorly stimulated respiratory centers, add to the possibilities of atelectasis.

SILICO-TUBERCULOSIS

Henry C. Sweany, M. D.

CHICAGO

The manner in which silicosis and tuberculosis enhance each other's progress is a unique medical phenomenon. The two are separate entities themselves and will run a definite course on their own account, occasionally killing quickly but more often slowly. Each may run through a lifetime without producing death at all. Each may also be so slight as to cause no clinical disease. Separated, they are problems which are being handled in stride by public health agencies, but together they are almost uncontrollable. Not infrequently in biology there are certain combinations that will result in a greater combined effect than the added effect of each taken separately. That seems to be true with regard to the "hybrid" disease complex known as "silicotuberculosis."

In this discussion, I am presupposing a general knowledge of both silicosis and tuberculosis. My purpose is to describe the joint action of the two as nearly as known facts will permit, with the modifying action of other factors such as inert dust and acute infection.

At the outset, let it be clearly understood that we are not dealing with a disease entity. It is a "blend" where every shade between the two conditions may be found as well as other associated peculiarities. Only the principal types, therefore, need be described as a "descriptive framework" for the whole disease complex. These types are arranged on the basis of the relationships of the factors involved, which depend on the time of appearance and dosage of the tubercle bacilli; the character of the tuberculous condition at different periods; the amount, purity and size of particles of silicon dioxide; the character and amount of other dusts taken in with the silicon dioxide or at other times; and whether the individual is a mouth breather, has impaired respiratory apparatus in the form of a bronchiectasis, or has cardiac or any other disease to damage the pulmonary physiology.

First, let us consider what seems to be a very common combination—that of a well-developed silicosis which slowly becomes tuberculous. The tuberculosis arises but gradually from a latent process. Incidentally, this observation seems to be a good indication for the persistence of living tubercle bacilli in the body, and throws much light on endogenous tuberculous spread. The silicosis appears to interrupt normal healing of old tuberculous foci and turn it into a slowly progressive process. The development of the process may be recapitulated hypothetically about as follows: the patient may be exposed to silica for many years but does not notice any difficuty; the roentgenogram may indicate nothing at all or a first or second degree silicosis. If no tubercle bacilli are present, the man may work throughout life and

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From the Research Laboratories of the City of Chicago Municipal Tuberculosis Sanitarium.

only develop a mild or moderate silicosis that may only shorten his breath and decrease his chest expansion a little more rapidly than normal. If tubercle bacilli chance to be present in an old healing process, the changes which subsequently occur are in proportion to the rapidity of the awakening of this tuberculous infection. The bacilli seem to be stimpulated to renewed activity by the silica or the silicotic process as well shown by Gardner[1] and Gye and Kettle[2]. Instead of remaining within the old foci and ultimately dying out completely, they slowly come out of "hibernation" and proceed from lymph node to lymph node and set up at first a mild but always a progressive process, and later a precipitate disease that ends frequently as a tuberculous bronchopneumonia.

The first signs of this change may be noted on the x-ray, as first indicated by Pancoast and Pendergrass,[3] and described in one of my earlier articles.[4] The nodules, ordinarily smooth, round or oblong and of a soft uniform density, become denser in the center, fuzzy and irregular around the border, and of unequal density.

They usually become quite large and may develop in large masses by a sort of "overflowing" of the tuberculous process around the border.

At the same time the lymph nodes become larger and definitely calcified, much in the manner of the calcification of primary tubercles. There is not the specific capsule, however, and no other features are in common with primary tubercles. This type of calcification when found in adults is almost pathognomonic of silicotuberculosis, because primary tubercles in adults rarely have a large lymph node involvement. There is obviously no problem in the young because silicosis is not found under 25 years of age. The calcification most frequently takes place beneath the capsule of the node, so that on the x-ray it will have the appearance of a ring. This type we have called "egg-shell" calcification[5] because it is situated around the circumference and, on compressing such nodes between the fingers, it feels like crushing an egg shell. The probability is that the more superficial the process, the later was the appearance of the tuberculosis, because after the node has become fibrotic the only open lymphatics are near the capsule. Most of such nodes are hidden behind the heart, but not infrequently the bronchopulmonary nodes may be visible out from the hilum. To visualize these nodes a lateral or oblique-lateral picture will expose them better.

During the early stages there are no good laboratory examinations of value. The blood and urine studies have been disappointing because of the tremendous fluctuations, due to diet. Ultimately, if the patient's silica level can be established on a constant silica intake, it may be found useful. At this stage there is also no sputum, so nothing can be added by a sputum study.

As time goes on the nodules in the lung may enlarge to masses, or the bacilli may increase to such an extent that caseation results, which is followed sooner or later by ulceration. The only added feature roentgenologically is the presence of early cavities and an increase in the fuzziness of the x-ray shadows until there is a blotting out of the silicosis appearance. The trachea is usually found in the mid-line, and the disease progresses bilaterally.

Microscopically, the fibres around the outside of the nodules become much thinner, and small accumulations of lymphoid tissue appear at intervals around the margins; the central part becomes caseous until there may be no trace of fibres at all. This was described before[5] as a "washing out" of the fibres, as in the making of water colors. Like all other phases of this problem it is a slow progression. Sometimes there may remain a "core" of heavy fibres around which the tuberculous phase is superimposed. Such conditions suggest that the silicotic nodules were first and the tuberculosis was relatively recent.

In the laboratory examination of the sputum of such cases there are rarely found tubercle bacilli at the beginning of expectoration, and there is every reason to suspect that few are present. Later on a few may appear, but only when a terminal tuberculosis develops do the bacilli become numerous. It has been suspected that these bacilli are of low virulence, but Cummings[6] was unable to find any reduction of virulence in such strains of tubercle bacilli.

Recently, due to the fundamental work of Clark and Reynolds,[7] there have been developed systems of analysis by x-ray diffraction, so that it may ultimately be possible to determine the pathological levels of silica and other substances in the sputum. In our institution Klaas[8] has made preliminary studies directly on powdered lungs with gratifying results. Jephcott and as-

sociates[9] have made similar studies on digested lung samples with promising results. They were unable to fix the threshold level of silica that results in pathology, as we are apparently able to do on direct studies; but if quantitative figures can be obtained such a level can easily be established. A quantitative method, therefore, may be evolved from digested samples that will permit of a sputum analysis for detrimental silica, which will be a great aid in diagnosis.

As stated before, the whole disease process changes gradually from one that may be typical of silicosis to one that does not look at all like it but like a fibroid tuberculosis or even a tuberculous bronchopneumonia. Towards the end of the disease course the majority of these cases are so much like tuberculosis that there is no way of telling the presence of the silicosis component except by the history or by laboratory analysis. This condition suggests the advisability of serial x-rays where possible, to detect the progressive tuberculosis or to apprehend the silicosis before it becomes obliterated.

Throughout our various reports there are many cases of this type. Many of these have been illustrated. Attention is especially called to one former report,[4] (case 1 and figure 1), where there is still a silicotic aspect at the time of death.

Next in importance, I believe, is a group where the silicosis is first developed and tuberculosis comes on afterwards as a definite exogenous process which varies with the time of appearance of the tuberculosis and the dosage of the bacilli. There is usually a rapidly ulcerative process in the upper parts of one or both lungs with varying degrees of infringement on the silicotic process. There are apparently many such cases reported in medical literature. Agricola cited an instance among the miners of the Carpathian mountains, where a woman was known to outlive seven husbands. The probability is that in such a rapid sequence of death and matrimony amongst the miners, the perpetual wife was an old fibroid phthisic who was awaiting each new silicotic spouse with a quick-acting dose of bacillus tuberculosis. Case 22, of the work with Porsche and Douglass,[5] represents one of this group. Another is case 27 which has such unusual interest that full details will be reported here for the first time. The tuberculosis in this case, however, is not quite so rapid, as is usually the case.

Case 1 (case 27 of former report): J. E. (A737) was born in Ottawa, Illinois, in 1905. He attended public school till 1920, worked in a printing plant till 1922, and then worked for six months in what he said was a "cement factory." He was then a chauffeur till 1924, after which he came to Chicago where he worked till 1928 as a clerk for the Chicago and Northwestern Railway. He was out of work till 1930 when he began work as a wholesale grocery clerk; but in 1932 he developed a cough. It became severe by March, 1933, so that he was forced to quit work and rest. A nurse calling to see his sister's baby, advised him to go to the dispensary. This he did, and was diagnosed tuberculosis. At first he was sent to the Cook County Hospital to break contact with the baby, then to the Municipal Tuberculosis Sanitarium where

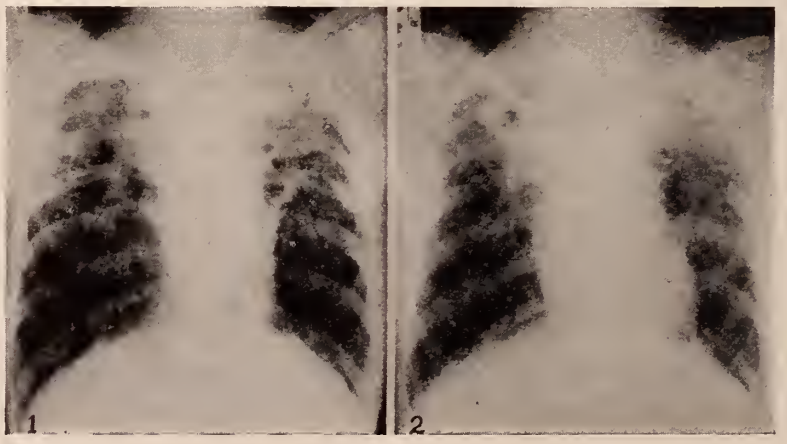


PLATE 1

Fig. 1. Roentgenogram of J. E. (A737), taken on admission to the Sanitarium. Note the characteristic appearance of tuberculosis.

Fig. 2. Another, taken just before death. Note the increase in the size of the heart—much more than the extremes of the cardiac cycle would warrant. The gross and microscopic photographs of this case are shown in Arch. Path., Nov., 1936, Vol. 22, p. 620.

the same diagnosis was made. No suggestion of silicosis was ever made until the postmortem examination, when an advanced silicotuberculosis was found. "There were shrunken fibroid cavities in the upper lobes of both lungs, with heavy fibrous caps over both apices measuring between 1 and 2cm. in thickness. In the mid lung fields were numerous small slate-gray nodules



PLATE 2

Fig. 3. Roentgenogram of F. G. (A429), on admission to the Sanitarium.

Fig. 4. Post mortem roentgenogram. Note several calcified nodular tubercles in the base and a scattering of calcified foci in the uppers. There was a solid slate-gray fibrous cap over both apices and large slate-gray lymph nodes at the hilum.

measuring 2-3 mm., some of which were caseous. Towards the base the nodules were smaller." (Plate I, Figs. 1 and 2.)

"At the bifurcation of the trachea the lymph nodes were enlarged to about 4x5 cm. tough, fibrous and of a slate-gray appearance."

Immediately after this case was reported in the literature, I received letters from several sources (including Dr. Gardner) calling my attention to the fact that work in a "cement factory" was not enough to explain the silicosis. This, of course, was granted, but nothing else in the history, clinical findings, nor x-ray had suggested it. The "cement factory" history was put in quotation marks, indicating that the patient himself had made that statement, but it was only to be taken for what it was worth.

After this, however, an attempt was made to clear up the case by consulting his relatives. Nothing definite could be found because the old firms for which he worked ten years before had closed down. Fortunately, Dr. Roswell Pettit of Ottawa, Illinois, volunteered to investigate the matter, and apparently succeeded in obtaining a satisfactory explanation of the source of the silicosis. Quoting from a letter dated December 9, 1936, Pettit states as follows: "I am of the opinion that the man you are asking about was probably employed at a plant located between Ottawa and La Salle, Illinois, that was formerly used as a cement mill and then was later employed in some silica work." And on January 29, 1937, the following is part of another letter: "Today a letter comes from Mr. P. N. B., who investigated the previous employment of J. E., that confirms my statement to you of last week. Mr. B., informs me that J. E., worked in a cement plant from July 3, 1920, to December 31, 1920, as an oiler in the basement of the power house. This was three years previous to the dates J. E. gave you, that is, 1923. Later he worked in a cement plant, from September 23, 1922 to

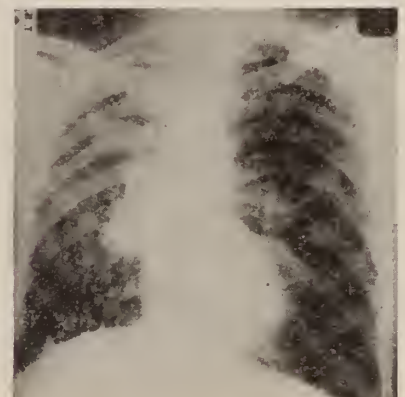


PLATE 3

Fig. 5. Roentgenogram of M. R. (A411), a quarry worker for nine years. Note the typical appearance of fibroid phthisis.

November 30, 1922, in a shipping department—two months; a total employment in the cement industry of eight months."

"Later, according to Mr. G. L., who now runs a small sand business in Utica, Illinois, J. E. was employed in the *American Mineral Grinding*

Company and Illinois Pulverizing Company, a concern that processed silica sand, grinding it into fine powder for use in cleaning powder, etc. Mr. L. states that J. E. was employed there in 1923 *or* 1924, *probably four to six months.* You may consider that four months in such a silica grinding industry was a short exposure, but it was common knowledge in and around La Salle that a number of deaths occurred as the result of working in this particular plant where it is reasonable to assume little or no protection against inhalation of very finely powdered silica was employed. I have a number of cases in my files working under similar conditions that acquired a definite pulmonary silicosis in less than six months."

Perhaps his exposure in the silica was so short and insignificant that it was not considered of any importance when his history was taken, by both patient and doctor, and the clinical examination, and especially the x-ray, revealed nothing of a silicotic nature. Usually a complete "dust" history in a tuberculosis sanitarium is not practicable unless there is something in the history

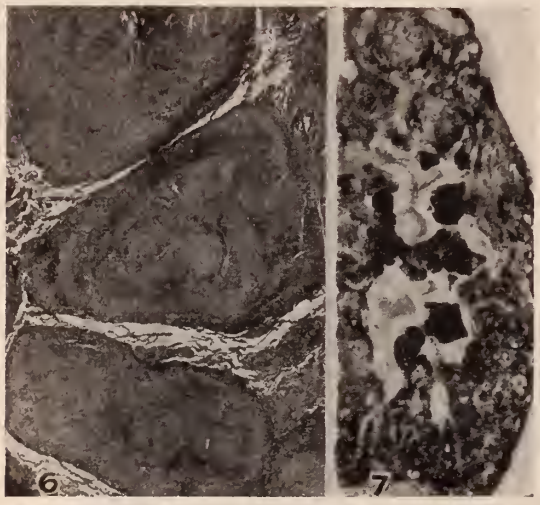


PLATE 4

Fig. 6. Low power photomicrograph showing large nodular whorls with coarse fibres in the centre but thin and caseous fibres around the periphery. X 20.
Fig. 7. Gross photograph revealing the hard gray-black lymph nodes.

or x-ray to suggest it. The illustration reveals that the x-ray is typical of a far-advanced tuberculosis, and nothing at all to suggest silicosis. The only feature is the short exposure, but the recent experience in Gauley Bridge, West Va., and the old report of Betts,[10] shows that large amounts of finely divided silica will produce silicosis in a short time. Heffernan[11] also believes that the existence of acute silicosis can no longer be doubted. The unusual feature in this case is that he had no symptoms of disease until his tuberculosis came on eight years later. Had he

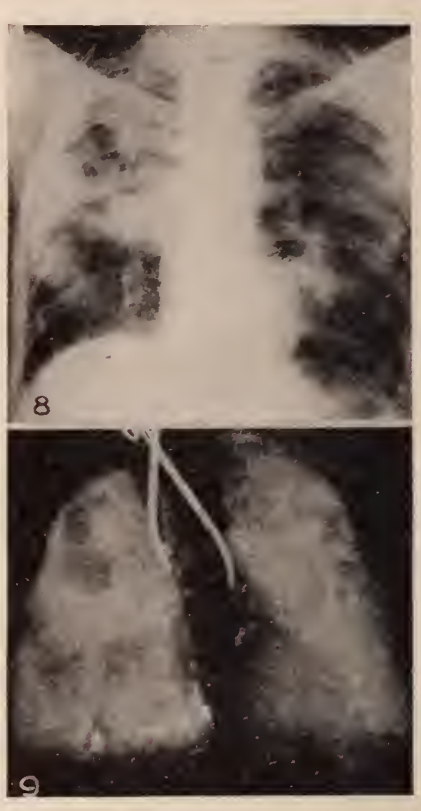


PLATE 5

Fig. 8. Roentgenogram of J. P. (A802), revealing an appearance of fibroid phthisis.
Fig. 9. Post mortem roentgenogram. Note the peculiar calcification of the lymph nodes. Photomicrographs of this case are shown in Arch. Path., Nov., 1936, Vol. 22, p. 612.

not contracted the tuberculosis he may have lived to be old. The tuberculosis was either taken in at the time of the dust exposure or, more probably later, and developed along characteristic lines, concealing any signs of silicosis that may have been present. Had an x-ray picture been made years before the nodules of silicosis may have been seen, but there was apparently no illness to warrant it.

Another type of case is one wherein there is fibroid tuberculosis present before the silicosis appears. This is the most difficult of all to evaluate. There are no signs, symptoms, or findings that will differentiate this group from tuberculosis except chemical analysis. The x-ray may

show unilateral or bilateral nodulation resembling silicotuberculosis, but it is usually apical, unilateral, or regional, so that it cannot possibly be distinguished from tuberculosis without a chemical analysis.

The following cases of the work with Porsche and Douglass[5] illustrate this type: Cases 20, 9, 15 and 19.

Cases 20, 9, and 15 all reveal regional involvement. Case 2 (case 20 of the former report) was a knife grinder for thirty-seven years. Outside of a terminal tuberculosis on a silicotuberculosis there was a peculiar regional involvement along subapical bronchi to the upper lobes. The third case (case 9 before) gave a history of an "engineering draftsman" for over thirty years. It is probable that the true cause of silicosis was not given in the history. At any rate there was a bilateral and apical involvement with silicotic lymph nodes, not at all typical of a silicotic localization (Plate 2, Figs. 3 and 4.) The fourth case (case 15 before) was a molder for thirty-five years. There was a tuberculosis which perhaps preceded the silica exposure, and as a result there was a marked exaggeration of not only tuberculosis but of silicotic involvement on one side. This was illustrated in an earlier report (4).

Case 5 (case 19 of former report, but not given in detail) was a quarry worker for nine years. There was evidence of an antecedent or simultaneous tuberculosis with a slight silicotic component. The chemical analysis revealed a pathological level of total silica, but the x-ray diffraction pattern did not reveal enough silicon dioxide to cast a characteristic shadow on the undiluted lung sample. This type of case illustrates the most difficult type to evaluate, because there is only a slight picture of silicosis on an advanced tuberculosis, yet there is definite evidence of a gross and microscopic silicotuberculosis of the lymph nodes. (Plate 3, Fig. 5; Plate 4, Figs. 6 and 7.)

Without confusing the picture unduly, the effect of other dusts on the various conditions previously described must be mentioned. This is particularly true of coal and iron, but there are many other dusts, each with a different effect. Perhaps only one type need be mentioned, and the rest must be left much to the imigination to fill in. Reference is also made to the work with Porsche and Douglass, where several of this type are illustrated, case 40 especially.

The result depends upon the time of appearance of each ingredient. Coal dust (and perhaps also iron), instead of enhancing the development of silicosis and tuberculosis, seems to cause a dampening effect on both; it seems to slow down both diseases, as shown by the work of Cummings,[12] as well as our own. Instead of the nodulation there are usually formed huge clouds and masses out in the lung parenchyma. Sometimes such conglomerate shadows will form without coal and iron, but it is not so frequent. This is due, perhaps, to the marked stimulation of phagocytes by coal and iron. These phagocytes then engulf pigment and silica and accumulate in great masses. There may be enough silica present to cause the fibrosis to form into skeins rather than whorls. Many times the pigment may be arranged in between the "skeins" of fibrosis. The phagocytes become so numerous and accumulate so much carbon that they frequently break and liberate the pigment. It is taken up by other cells and so on until the liberated enzymes digest away the fibrous tissue forming first, fissures, then stellate cavities, and finally huge cavities lined with black pigmented solid tissue.

Most of the cases formerly reported have a well-established silicosis. Case 6 (case 11, before) a blacksmith and tool grinder for forty years, is one where the silicotic component was very slight. In fact, there was very little gross evidence of it and only a postmortem x-ray of the lymph nodes and microscopic sections of some of the nodules were typical. (Plate 5, Figs. 8 and 9.) The chemical analysis was just above the threshold of pathogenicity.

As stated before the amount of silicosis present helps to determine the course. If the coal is predominant the lymph stasis prevails and the patient is prone to develop acute infections, bronchitis, bronchiectasis and pneumonia. As the silicosis increases, the tuberculosis comes more into the foreground. Each coal mine or type of work will, no doubt, vary from every other type unless the various irritants are in the same proportion.

SUMMARY

The whole field of silicotuberculosis seems to be, therefore, related to three factors—silicosis, tuberculosis and inert dust. The silicosis and tuberculosis enhance each other; the coal dust tends to check both, but is prone to cause the development of huge masses and finally cavities. If the inert dusts predominate the fourth hazard appears, viz.: acute infection. The hazard of acute infection, however, is not in the same category as the silicotuberculosis, or even silicosis.

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THE VALUE OF FLUOROSCOPY AND ROENTGENOGRAPHY IN THE STUDY OF CERTAIN DISEASES OF THE NECK

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The laryngologist, the bronchoscopist and esophagoscopist are all concerned in any method which will increase their diagnostic efficiency in the study of the neck, cervical esophagus and upper respiratory tract. The most valuable of all supplementary methods are fluoroscopy and roentgenography. By means of the former, they may observe the tongue, epiglottis, soft palate, larynx, esophagus and trachea in action and, with the latter, they are able to make a record of various phases of this action. They are able also to record progress of disease or treatment of parts of this region from time to time.

The purpose of this paper is not to present something new and startling, but rather to stimulate your interest and desire to make a more frequent use of this very valuable method of studying the neck and its contents. To obtain the greatest efficiency in the application of this method there must be the closest co-operation between the laryngologist and the roentgenologist. Without it little progress can be made. By the very nature of our training as laryngologists we are more familiar with the anatomy and physiology of the neck and its contents than the average roentgenologist. Therefore we owe it to ourselves to develop and retain a fine spirit of cooperation for the mutual benefit of each.

Historical. Shortly after the discovery of the x-ray, Scheier presented a paper on laryngeal cartilages. In 1909[1] he studied the speech mechanism and in 1911, the swallowing act. Iglauer,[2] in 1914, was a pioneer in the United States in work on roentgenologic diagnosis of disease of the larynx and trachea. In 1921 Pfahler wrote on the thyroid; Tucker, in 1925, on retropharyngeal abscess, and Manges, in 1925, on non-opaque foreign body in the trachea. In 1929 Hays published the first collective study of the entire upper air passages and soft tissues of the neck. Since then many papers on the subject have been published both in the United States and in Europe.

General Technique. In studying diseases of the neck and its contents some systematic method should be developed and adhered to.[3,4,5] A careful history[13] should be taken, a complete physical examination made and a blood Wassermann or Kahn done, unless the cause of the condition or disease is evident. An indirect examination by mirror and an x-ray study should be made. In chronic cases, where cough or chest symptoms are present, a chest study and sputum examination are important. This applies especially in children.

After this preliminary study, the neck and its contents are observed fluoroscopically. The position of the tongue, the epiglottis, the soft palate, hyoid bone, the pyriform sinuses and the soft tissues of the retropharynx, retrolarynx and retrotrachea are observed. The arytenoids, the aryepiglottic folds, the ventricles and the thyroid and cricoid cartilages are studied. The illuminated or air-containing spaces of the pharynx, the vallecula, the laryngeal vestibule and ventricles and the trachea are examined. Any encroachment into these spaces is noted. Probably the most useful and valuable aid the x-ray offers us in the study of the neck lies in the remarkable clearness with which these encroachments can be studied.

We may divide the structures into three groups and three or four anatomical zones, according to Hirsch and Baum.[6] In the first group are the osteocartilagenous structures, including the horizontal ramus of the mandible, the hyoid bone and its cornua, the laryngeal cartilages, the tracheal rings and the second to the seventh cervical vertebrae. Under the second group fall the various soft tissues less dense to the x-ray, such as the base of the tongue and floor of the mouth, the soft palate, the submaxillary region, the prelaryngeal, pre-tracheal and post-tracheal structures and the posterior pharynx. Under the third group are the illuminated areas containing

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air, the vallecula and pharyngeal vestibule containing moist air, the laryngeal ventricles containing less, the laryngeal vestibule still less and the subglottic filled the least.

Division of the neck from the lateral view may be divided into zones.[6] This division may be of value in locating and describing more exactly the extent and location of lesions. These zones are the suprahyoid above the hyoid bone, the thyroid between the thyroid cartilage and the hyoid bone, the thyrocricoid containing the larynx proper and the tracheal zone below the larynx.

After a general fluoroscopic examination of the neck and its contents, the action of the tongue, epiglottis, soft palate, hyoid bone, larynx and esophagus in the act of *swallowing* is observed. The swallowing of an opaque mixture greatly facilitates the study. Pancoast,[3] Mosher[7] and others have described the various stages which they have observed during the act of swallowing. If there is any abnormality in this action, as seen on lateral, oblique or anterior views, roentgenograms may be made for further detailed study and record. This is of particular

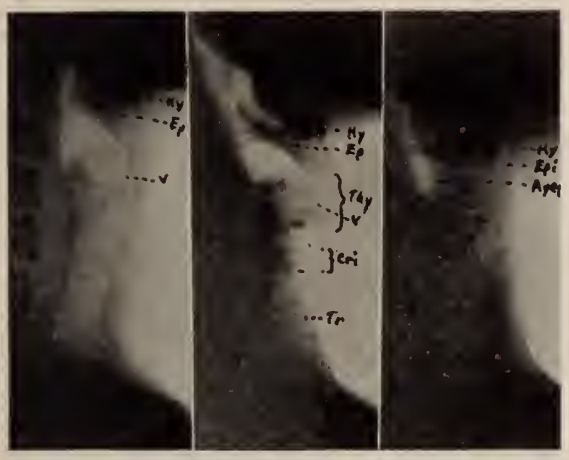


Fig. 1A. Female, age 19, showing irregular distribution of calcification of laryngeal cartilages which might suggest the presence of laryngeal disease or foreign body.

Fig. 1B. Shows more extensive calcification in female 28 years of age who had had considerable x-ray treatment for goiter 14 years previously.

Fig. 1C. Demonstrates the loss of detail and sharpness in laryngeal structures in a case of marked acute laryngitis with edema in male age 26.

value in studying cases of paralysis of the swallowing muscles,[7] retropharyngeal diverticulum,[7,8] postcricoid and esophageal webs,[7] abnormalities of movability of the epiglottis, arytenoid and the larynx due to the presence of growths, of inflammation and in disturbance of esophageal function.

Next the larynx is studied fluoroscopically. The ventricles are observed as zeppelin-shaped structures, superimposed on lateral view. Any



Fig. 2. Shows edema of the epiglottis, arytenoids, aryepiglottic folds, etc., with marked narrowing of the air-way through the larynx. This man, aged 64 years, noted soreness of his neck five days before, followed in 48 hours by rapidly increasing hoarseness and difficulty in swallowing. Upon admission he was unable to swallow liquids and was gasping for air. White blood count was 28,800 with 92% segmented cells. During direct laryngoscopy an incision was made into the left edematous arytenoidal mass which almost completely obstructed the laryngeal vestibule. Pus was evacuated. Rapid recovery ensued.

deformity or obstruction in this air-containing space may indicate inflammation, edema, tumor or paralysis. While the patient pronounces certain vowel sounds,[9] any changes in the ventricles are noted. The arytenoid cartilages project into the illuminated zone of the vestibule and onto the aryepiglottic folds. The degree and location of calcification or deposits of lime salts in the laryngeal cartilages is observed.

Lateral roentgenograms are then taken during phonation of a vowel sound such as "a."[9] Following this, another lateral film is made immediately after the patient has swallowed a small amount of lipiodol, a little bismuth milk or other opaque mixture. Stereoscopic films give a third

Footnote: Only a few more common and representative cases are presented here. Abbreviations used are: Abs—abscess, Ary—arytenoid, Cri—cricoid cartilage, Ayepi—aryepiglottic fold, Ep—epiglottis, Hy—hyoid bone, Tr—trachea, Thy—thyroid cartilage, V—laryngeal ventricle, Val—vallecula.

dimension and therefore separate the various structures which are observed as superimposed on single lateral films.

In certain diseases or conditions it is of value to study the chest at the time the neck is being

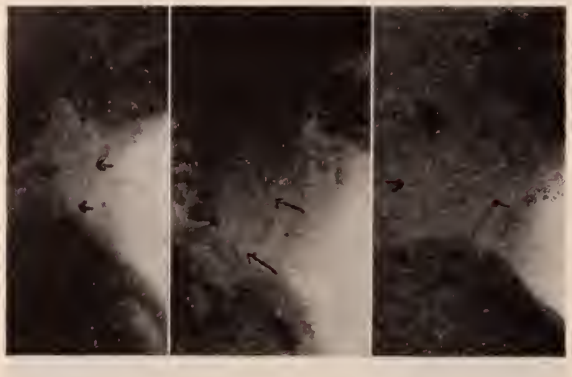


Fig. 3. Is from a case of acute edema of larynx, acute cellulitis and deep cervical abscess of neck below larynx and early upper mediastinitis.

Fig. 3A. Shows extensive edema of epiglottis, arytenoids, aryepiglottic folds and soft tissues of larynx after lipiodol had been dropped over the back of tongue. In male, aged 37 years, who had influenza a week before, followed by sore throat hoarseness, and swelling of the left side of the neck. Difficulty in swallowing and breathing increased rapidly. Considerable discomfort and feeling of marked fulness in upper mediastinum increased and patient became very apprehensive.

In lower part of figure 3A four arrows point to abscess showing changed density. In figure 3B the narrowed air-way is shown by arrows. Other arrows marked "AB" show abscess changed while arrows marked C indicate the extent of external swelling.

The deep cervical abscess was incised and drained. Local and general treatment brought about a rapid reduction of edema making tracheotomy unnecessary.

observed. This is frequently of great importance in children. The mediastinal blood and lymph systems and posterior fascial planes are continuous with those of the neck. Retropharyngeal invasions are particularly prone to invade the mediastinum. Deep cervical abscesses seek the same region.

In general, we may observe by x-ray studies a disturbance in the relationship of structures and air spaces in edema, inflammation, tumors, paralysis and in some foreign body cases. A fungating growth or rounded tumor projecting into the air spaces may or may not disturb the relationship of structures, depending largely upon the size, location and extension of the growth. On the other hand, infiltrating tumors deform the contour and increase the shadows, as observed in the encroachment onto or into the air spaces. Inflammation and edema diffuse the outlines of involved structures. Edema, in particular, disturbs the relations and invades air spaces with greater freedom than tumors. If there is an inflammatory invasion of cartilages, irregular defects may be seen as in ulceration and necrosis.

Calcification of Laryngeal Cartilages.[12] In 1896, shortly after the discovery of the x-ray, Scheier presented a paper on the laryngeal cartilages and their calcification. Because calcification and the deposition of lime salts are observed as dense roentgenographic shadows which may resemble those of foreign bodies, special interest has been given to determine the relationship of age and growth of the individual to the time and amount of deposit. There are so many variations in the time of appearance, in amount and in the distribution, that no definite rules can be laid down. In general, however, it has been concluded that "calcification of the laryngeal cartilages normally begins when the skeletal growth is otherwise complete."[10] The process is more gradual and less extensive at all ages in women than in men.[10] It begins in the postero-inferior part of the thyroid cartilage, invades the lower horns and spreads forward along the lower border and later, especially in males, spreads to the superior horns along the upper margins. The cricoid begins calcification a little later, first in the posterior part of the signet and later in the

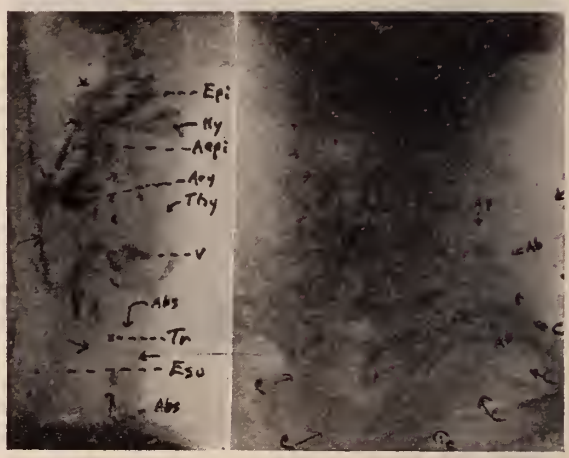


Fig. 4. Shows various degrees of retropharyngeal abscess in children under 18 months of age. Fig. 4C shows extreme dissection of the tissues from the base of the skull to the mediastinum. Recovery occurred after incision and adequate drainage even though a mediastinal invasion could easily have proven fatal.

anterior part. Arytenoid calcification appears about two years later.[10] According to Brown and Reineke, calcium in the female is likely to be laid down in dense spots, while in males it is likely to be more diffusely distributed. More-

over, the distribution is not always symmetrical in both sides of the larynx.

Foreign Bodies. Foreign bodies are usually found below the level of the larynx, but occasionally they lodge just behind the cricoid.[8] They may also become buried in the soft tissues adjacent to the larynx. The x-ray is of special value in differentiating irregular and scattered areas of calcification and opaque foreign bodies in these regions. It is also of very great value in studying foreign body problems and planning their expeditious removal from the larynx, trachea, cervical esophagus and pharynx. This careful preoperative study with the fluoroscope and films, lateral, antero-posterior and, at times, oblique, has saved valuable operative time, has simplified operative procedures and, without a doubt has saved lives.

Fractures[11,12] of the laryngeal cartilages occur in both adults and children. They are most frequent in the thyroid. Their detection by the x-ray is not as satisfactory as by a history of hoarseness, bloody sputum, presence of crepitus or subcutaneous emphysema. *Dislocations*[11] of the thyroid cartilage may be visualized during manipulation of the larynx under the fluoroscope. There may be an asymmetry of the thyroid cartilage which causes the pyriform sinus to be smaller on one side than on the other.



Fig. 5A. Shows a retropharyngeal abscess before drainage in a male 58 years of age who had had increasing difficulty in swallowing for two weeks before admission. Incision and drainage.
Fig. 5B. Shows x-ray just before second incision and drainage. Recovery.

Edema. One of the principal reasons for presenting this paper was to reemphasize that presence and extent of edema in the neck and its contents can be easily demonstrated by the so-called soft tissue technique. Many times we have all felt the need and great urgency to find out how extensive and how serious to life the edema was in cases of impending laryngeal obstruction.

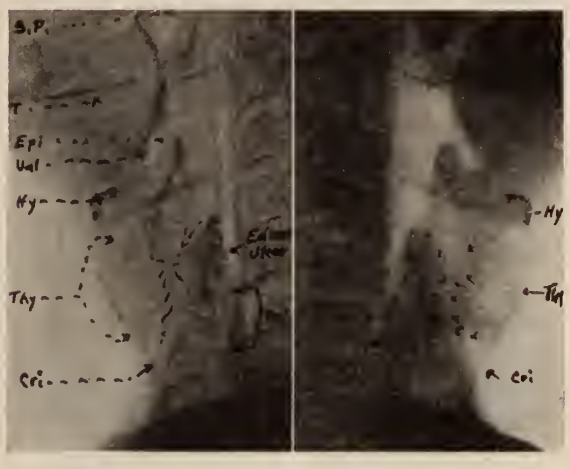


Fig. 6A & B. Shows extreme narrowing of the glottis, absorbtion of parts of calcified areas of laryngeal cartilages and edema and ulceration of the party wall between the hypopharynx and larynx. A diagnosis of advanced pulmonary tuberculosis was already made in this male about 60 years of age but a laryngeal examination and x-ray gave a better understanding of the situation in the larynx.

Edema occurs in children and adults. It is particularly serious in children under two years of age and in some streptococcal throat infections in the adult. Mirror examination of the larynx is at times almost or quite impossible. Direct examination, if done, would reveal the condition of the presenting surface only and would tell us nothing about the extent of involvement. X-ray then comes into its own and reveals the true extent of the invasion. Here again the use of a few drops of lipiodol, dropped on the back of the patient's tongue, will outline on the film more evidence than one taken without it. The edematous areas are seen projecting into the air spaces of the regions involved.

Retropharyngeal abscess is found most frequently in children but also occurs in adults. The retropharyngeal space or tissues is known to be very sensitive to inflammation and injury, particularly in the upper part of the pharynx. Inflammations and abscesses in this space easily spread downward into the mediastinum. Therefore the chest, as well as the neck, should be studied and watched until the danger has passed. It should be borne in mind that retropharyngeal abscess may also be associated with a tuberculous

lesion of the cervical vertebrae. Mosher has pointed out that the behavior of the postpharyngeal space is an index to the extent of trauma to the esophagus and the extent of the resulting inflammatory reaction. Even after removal of a foreign body from the mouth of the esophagus, swelling may remain for days to weeks.

Webs of the esophagus and pyriform sinus[7] may be demonstrated after the patient is directed to swallow some opaque mixture. Occasionally they are seen behind the cricoid or just below. When single, they are probably due to ulceration, infection or injury. If at the mouth of the esophagus, they may be easily overlooked. They may also be found an inch or so below the cricoid and are occasionally broken down accidentally at the time of esophagoscopy. After the passage of the rigid tube, the patient feels relieved of his symptoms. The history of difficulty in swallowing may lead one to suspect malignancy or, at least, should rule it out. Webs in the pyriform sinus cause a sensation of something sticking in the throat. The swallowing of opaque materials, while under the fluoroscope, should give evidence of the cause.

Diverticulum of the hypopharynx[7,8] occurs in the region just behind the cricoid cartilage where the posterior wall of the hypopharynx is the thinnest. The musculature is weak or absent at this point and herniation of the esophageal mucosa may occur, resulting in diverticulum of the hypopharynx. Jackson has demonstrated that this type is not a true esophageal diverticulum.

Strictures of the esophagus may occur just behind the cricoid and cause pulsion diverticulum of the hypopharynx.[7] Ulcers, infections, trauma and lye burns may result in webs or in strictures of the cervical esophagus and can be demonstrated after the swallowing of opaque mixtures.

Exostoses of the cervical vertebrae should be looked for. As pointed out by Mosher,[7] their presence may be a contraindication for the passage of a rigid esophagoscope. They may cause difficulty in swallowing. Webs may be associated with exostoses.

Paralysis[7,14] of the muscles of swallowing may be shown under the fluoroscope as an opaque mixture is being swallowed. The paralyzed side shows a bulging of the pyriform sinus and lateral pharyngeal wall on the involved side as seen in the antero-posterior view.

Mention only will be made of *Tumors*. A great many papers have been written about them. Tumors are found in many parts of the neck and its contents. In most places the x-ray will afford a better knowledge of their extent and encroachment upon other structures and the air spaces than any direct method of examining. In the larynx their invasion of the ventricle is of greatest significance in the war on early laryngeal cancer.

Tuberculosis and *Syphilis* involve the larynx.[2] When the cartilages are attacked, tuberculosis may cause a decalcification and there may be a characteristic washed out, hazy appearance and a thickening of the soft tissue shadows. In syphilis there is a tendency to increased calcification of the involved cartilages.

Trachea. Occasionally it becomes necessary to know whether a tracheotomy tube is fitting the trachea properly. This can be easily observed by the use of the x-ray. Tumor of the upper end of the trachea is more easily demonstrated as a mass projecting into the air space of the lumen. An examination of the upper end of the trachea reveals the amount of subglottic edema and aids in the differentiation between this type of edema and other causes of laryngeal obstruction. X-ray is also of much value in determining the degree and extent of compression stenosis of the trachea as in the presence of substernal thyroid or large adenoma of the thyroid.

CONCLUSIONS

1. The roentgen examination of the neck and its contents has not been given as important a position in roentgenographic procedure as have other parts of the body.

2. It is of value in determining the location and extent of edema, of inflammation, abscess and tumors, particularly in regions not easily examined by other methods.

3. It is of value in determining the degree of encroachment upon the lumen of the trachea from outside pressure of goitre and thyroid tumors, etc.

4. It is of value in studying and recording the progress of disease or treatment.

5. It is of value in the preoperative planning of surgical procedures and study of foreign body problems.

6. By this method structures of the neck may be divided into osteocartilagenous, soft tissures and air spaces.

7. A systematic method of examining the neck and its contents should be developed. By this means misinterpretations and even failures to interpretate will be greatly lessened.

8. The laryngologist and roentgenologist should cooperate here as in other fields. The former has detailed knowledge of the special anatomy, physiology and pathology of the region, while the latter has knowledge and experience about the x-ray and its application to the human body.

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EARLY PATHOLOGICAL LESIONS OF THE CERVIX AND ENDOMETRIUM

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Pathological lesions of the cervix and the endometrium become important in the field of clinical investigation because of their frequency, their liability to cause grave interference with the functions of the organs of reproduction and their challenge to the very life of the individual. While it is the lesions of a malignant character which contest the life of the individual, the benign lesions are also important because of their frequency as an almost symptomless disease, the part they play in functional interference and the fact that some benign lesions appear precancerous. That the detection and the eradication of the benign lesions of the cervix and endometrium is warranted cannot be emphasized too strongly. Every avenue of approach toward a better understanding of the origin and the nature of the lesions affecting these tissues must be studied and every available agent capable of aiding in early diagnosis and control must be instituted. Furthermore, it behooves us to be alert and keep abreast with all of the advances in the well-established standard methods of technique in diagnosis and treatment, and we must also endeavor to perfect any measure or special examination that may contribute in the slightest way to the further control of these lesions.

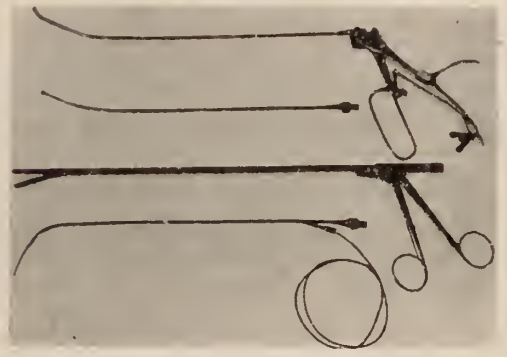


Fig. 1. Illustration shows instruments referred to in the text of this paper. From above downward, a biopsitome with flexible shaft over which is placed thin pure rubber tubing for insulation. The fenestrated jaws at the distal end represent the only point where cutting current may reach the patient. Biopsy specimens when exceedingly small are not damaged by electricity. Second instrument is a flexible tube with syringe attachments, side fenestration and at the distal end the ball may be used to occlude an open oviduct at the intramural portion which permits introduction of contrast material under pressure without escape into the oviduct. It is also used for other purposes. Third instrument is another type of biopsitome. After tissue has been grasped with the jaws of bakolite, the wire loop passes across from one jaw to the other, severing the specimen from the uterus with electrical cutting current. The entire instrument except the loop is insulated from the cutting current. The fourth instrument is designed for catheterizing the oviducts.

The differentiation of benign and malignant lesions is essentially the purpose of this paper. In the examination of every case, the time-honored methods which consist of a study of the history, the physical observations, including inspection, palpation, probe diagnosis, etc., must never be neglected. On the other hand, the hazards of clinical judgment and diagnosis based upon the findings elicited by these methods alone

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are frequently misleading and the patient's chance for health is jeopardized. To be able to say that a lesion is benign or malignant in clinical practice is not sufficient. The benign lesion must be properly classified. The extent

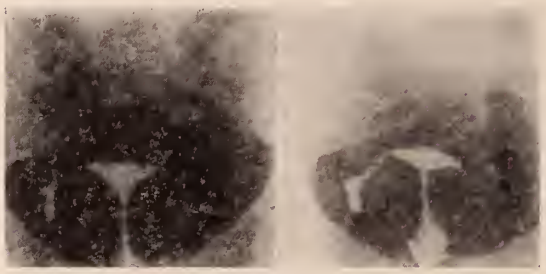


Fig. 2. Illustrates finding of normal uterus and cervical canal. Left above shows the right, left, and superior margins of the uterine cavity; the external os, indicated by the apex of the rubber cone; the internal os where the triangular portion of the uterogram connects with the cervical canal. Right above shows the corpus uteri in different position through manipulation of the instrument and the posterior and anterior surface is clearly presented. Note all surfaces and margins free from filling defect; oviducts open throughout; ostium abdominale patulous, with contrast material in the free pelvis.

of involvement must be determined and all of the possible complications that may exist revealed in order that the proper treatment may be instituted for their eradication. The malignant lesions also require very specific investigations, for the character of cancers occurring in these tissues vary greatly one from another. The type of the malignant growth, its activities, the mode of extension, and the plan of treatment depend very largely upon whether it arises in the endometrium or in the cervix. In general, those which arise in the endometrium are of low grade, almost always remain confined for some time within the corpus uteri, and under proper treatment respond well. In contrast, however, malignant neoplasms arising in the cervix uteri are almost always quite highly active in type, and as a consequence metastasize early, and local invasion is rapid. The accessibility of the cervix for diagnosis and treatment is therefore fortunate indeed. The fulminating character of the majority (85 per cent.) of the cervical malignancies accentuate the necessity for early diagnosis and determines largely the most desirable plan of treatment.

Highly active cellular changes which characterize the cervical cancers seem to creat radiosensitivity, and consequently correction through irradiation with radium and x-rays rather than radical surgical treatment has come to be quite universally accepted as the method of choice. It appears, however, that radical surgical procedures are effective and satisfactory when the lesion is found very early and there has been no invasion. On the other hand, irradiation is equally effective at this stage, and becomes far more efficient in controlling progress in those cases in which advanced stages render radical surgical removal inexpedient.

In all doubtful lesions of the cervix and endometrium a biopsy specimen must be secured for microscopic examination in order that a reliable diagnosis may be made promptly and positively. A negative report on a biopsy specimen often requires repetition in suspicious cases. The iodine test (Schiller) may help to locate precancerous or cancerous tissue, but it is seldom an essential aid in diagnosis. The site from which a biopsy specimen must be taken in order that a reliable pathological report may be secured is just as important when the lesion is located in the upper cervical canal or endometrium as it is when it is located in the accessible portion of the cervix. To obtain specimens of tissue in this manner, it is obvious that almost unsurmountable difficulties were encountered until the introduction of contrast material and x-rays were instituted as an aid in these examinations.

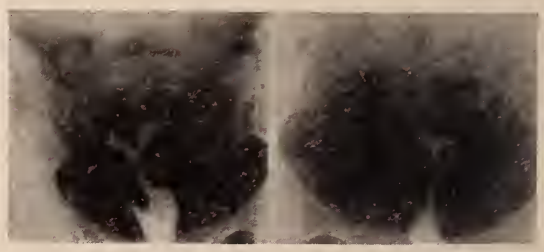


Fig. 3. Abnormal development of uterus and oviducts causing sterility.

Fig. 4. Multiple filling defect in uterogram indicating glandular hyperplasia with cystic polyp formation. The cardinal symptoms being menorrhagia and metrorrhagia.

Surgical curettage has for many years been the only method for obtaining the tissue specimens from which we could entertain a hope that microscopic diagnosis of a reliable character could be obtained. In spite of the dangers en-

countered, such as hemorrhage, the spread of a general sepsis, rupture of the uterus, generalized metastasis where malignant lesions were present, etc., it remained that the advantages seemed to outweigh all of these dangers or resort to unnecessary radical surgery, which was the only other recourse. Quoting Dr. James Ewing: "The routine curettage of the endometrium for fundus cancer must be held responsible for dissemination of tumor cells in a substantial proportion of cases. . ." Pathologists and clinicians alike



Fig. 5. This illustration shows typical defect in uterogram of corpus carcinoma.

have frequently had to face, with chagrin, the fact that the pathological report on tissue removed after a careful curettage of the endometrium and upper cervical canal has shown only necrotic tissue or other changes of an indefinite character, and later the presence of a malignant neplasm becomes apparent because unmistakable invasion has occurred.

A careful study of the defects which may be shown to be along the cervical canal and in the cavity of the corpus uteri with x-rays and contrast material becomes a very great aid in determining the presence of neoplastic and other lesions in these locations.

To replace the use of the curet in this work an instrument known as a biopsitome has been designed. With this instrument a biopsy specimen may be secured at any point along the cervical canal or the endometrium under the direction of the x-rays and the fluorescent screen from the site of a defect which has been located and studied radiologically. The biopsitome is so designed that a tissue at any location may be grasped and severed with an electrical cutting current in a manner which will reduce the hazards of the curet. Furthermore, repeated biopsies may be taken with the biopsitome from the same area or from several selected areas without inflicting damage to portions of the endometrium and servical mucosa in which no filling defects are found. After using instruments of this design over a period of several years in a fairly large series of cases covering a wide range of lesions affecting these tissues, it appears that the reliability of the microscopic reports is elevated and the liability of undesirable complications is exceedingly low.

In this connection it may also be mentioned that, under the guidance of x-rays and the fluorescent screen with variable amounts of contrast material within the endometrium, other electrosurgical procedures may be undertaken, e.g., oviducts stenosed at the intramural portion may be catheterized, the oviducts filled to variable distentions in the effort to open the ostium abdominale, thereby correcting sterility, etc. Further-

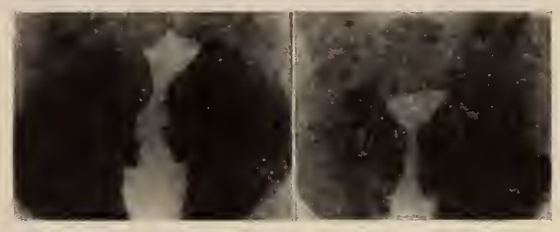


Fig. 6. Illustration shows neoplastic regression following adequate treatment by irradiation after twenty-four weeks.

more, the mucosa in the intramural portion of the oviducts may be destroyed by electrocoagulation, creating complete occlusion at this point and establishing sterility when it becomes desirable to avoid more radical surgical intervention. There are also other surgical procedures that may be likewise conducted.

Regression of neoplastic and other lesions following irradiation or other forms of treatment may now be observed with reliable accuracy long before such changes can be detected by any other method. Furthermore, defects caused by neoplasms may be determined in this manner before symptoms have developed which would give reasonable grounds for suspicion that such conditions exist. With these methods of diagnosis available it becomes apparent that important lesions may be detected early, their true character revealed through biopsitome specimens and the pathological report and the proper treatment planned and instituted at a time when it is most effective. Observing the progress of lesions without treatment, noting regression with treatment, the determination of adequate or inadequate treatment, as indicated by the presence of progression or regression, and finally the elimination of the hazards of the curet and radical pelvic surgery combine to create more reliable diagnoses, prognoses, and treatment.

FURTHER STUDIES IN THE TREATMENT OF ULCERATIVE COLITIS WITH ALUMINUM HYROXIDE AND KAOLIN

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In a previous study[1] of aluminum hydroxide and kaolin as an effective treatment for ulcerative colitis excellent results were reported. At the same time we were not unmindful of the fact that such success could not be obtained in all circumstances. In a fairly large series a few such instances have occurred.

The field of colloidal chemistry and physics has opened new chapters in medical knowledge. Protoplasm itself is in a colloidal state and thus a more comprehensive understanding of all colloids has become increasingly important. These studies are quite complex and confusing at the present time for they require considerable technical knowledge and their interpretation has not been uniform. This has resulted in wide speculation, often without proven merit, in the proper treatment of various disorders.

A great variety of substances exhibiting colloidal properties are now available for gastrointestinal disorders. Among these are charcoal, kaolin and aluminum hydroxide, as well as plant extracts which form colloids when mixed with water. Most of these are quite bland and act chiefly as adsorbents. Aluminum hydroxide differs from others in that it is amphoteric and somewhat astringent. Some adsorbents are most active in acid media, others in alkaline. Those most active in one medium may or may not show an irreversible affinity even though the reaction is changed, but this is only known to occur in the test tube. How far this holds true in the complexes of the digestive tract remains to be discovered.

The possibility of producing a nutritional deficiency by giving adsorbents orally has made us hesitate to give them over a considerable period of time. Small amounts for brief periods likely cause no appreciable harm. In a recent report[2] three dogs were given relatively large amounts of aluminum hydroxide cream with their food for five days without a significant change in the nitrogen and fat content of their feces. Emery[3] has discussed the pharmacology of gastrointestinal adsorbents at length, and pointed out this potential complication and questioned their usefulness in chronic disorders. Enormous amounts would be required to retain any activity in the colon after mixture with gastric and upper intestinal secretions. The additional danger of producing an intestinal obstruction with such dosage makes this route impractical in lesions of the lower intestine.

The advisability of giving such medication per rectum becomes readily apparent when treating ulcerative colitis. Larger amounts of active unchanged suspension are brought into direct contact with the lesion, and the possibility of disturbing an otherwise normal physiologic process is minimized.

A highly adsorptive property is necessary and a mild astringent action is equally useful. The aluminum hydroxide and kaolin mixture meets these requirements. Additional substance such as a lubricant is unnecessary and detracts from the original purpose in this type of therapy. Impaction formation is possible although un-

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likely if moderate care is taken as none of our series experienced this difficulty.

In our search for improvement in local treatment of ulceration in the colon two commonly used methods present themselves. Acriflavine irrigation, commonly used 1:3000, has a low toxicity and is highly antiseptic. A 15% bismuth subgallate suspension in mucilage of acacia is popular and of value. The bismuth subgallate is quite insoluble and considered as a protective, astringent and mild antiseptic. The adsorbent property of mucilage of acacia and the astringent action of bismuth subgallate appear to be its chief virtues.

Pure colloidal kaolin is highly adsorbent and bland, but tends to settle out of suspension into a firm mass, especially in the presence of an alkali. Aluminum hydroxide has great colloidal activity, does not settle out of suspension readily, forms a light viscid gel and aids in maintaining a neutral reaction. Neither of these substances have appreciable antiseptic action, but are useful for their ability to take up bacteria and toxins and eliminating them. The astringent property of aluminum hydroxide makes a combination of these two substances additionally desirable.

The large amount of mucus secreted in colitis may well be considered a defense mechanism which is aided by this therapy. Mucus is a highly active colloid which undoubtedly adsorbs much toxic material. An interesting observation is the prompt reduction in the amount of this substance even before the number of movements is reduced.

We find a mixture of three per cent pure aluminum hydroxide with 15% kaolin in colloidal suspension the most effective combination. Three to five ounces of this stock suspension with an equal amount of distilled water is usually given once daily. The retention should be given one hour or more after a small plain warm water cleansing enema and may be retained as long as there is no discomfort. In severe cases the retention may be expelled in one-half hour. After the acute stage subsides it is often retained for many hours or until the cleansing enema the following day. Both enema and retention are to be given at body temperature and under low pressure.

If the cleansing enema tends to cause irritation and the stools are of diarrhea type it is often omitted for a period of time and the retention given after the passage of a liquid stool. In the fulminating stage the retentions may be poorly tolerated making it advisable to give them on alternate days. When the stools become formed sedatives are discontinued. The retentions are continued until all evidence of inflammation has disappeared.

The majority of our cases responded satisfactorily to this form of management. All were hospitalized and put at bed rest. Frequent bland high caloric feedings, sufficient sedative to control pain or discomfort and an ample vitamin intake are essential.

Fresh stool and culture examinations were done routinely and one or more therapeutic antiamebic courses given to rule out parasitic infection. All dysentery agglutination tests done were negative. The usual foci of infection were sought and eliminated as far as possible.

Three of our cases lost tolerance to this type of treatment in severe recurrences, and a fourth did not tolerate retentions at any time. The first (Case 6) responded very well during her first attack, but one year later developed a severe sinus infection with an uncontrollable diarrhea and was ileostomized. The second (Case 12) continued in normal health after treatment until an amebic infection, contracted while on a trip to Mexico, was neglected and when seen some months later a multiple polyposis was present. The third (Case 9) ran a septic course for two months and cleared up when a phlebitis in the left leg initiated a recurrence with loss of tolerance to the retentions. The extensive destructive changes of the colon made his prognosis unfavorable. Our fourth patient (Case 1) was gravely ill, ran a septic temperature as high as 104° for seventy days and was unable at any time to retain rectal medication. She is temperature free at this time and gross blood has disappeared from the stools. Marked destructive changes of the colon are present and an ileostomy has been advised.

The uniformly good results of our first series were more than one could expect to maintain in treating any disease process.

It is not assumed that this preparation is a

specific for ulcerative colitis. We believe it a valuable addition to an already well-established treatment. Prolonged bed rest, frequent high caloric non-irritating feedings and adequate vitamins are of paramount importance. When permanent structural changes, such as cicatricial contractions and foreshortening are present a normal bowel physiology cannot be re-established, although much symptomatic relief may be obtained by careful management.

Case No.	Age	Sex	Weight	Onset and Course	Temperature
1.	23	F.	Min. 84 Max. 100	Diarrhea 4 mos. before treatment. Total time since onset 15 mos. Stormy course. Still confined to bed. Four stools per day now.	98° to 104.8° for 54 days. Fiv chills. Since then low grad fever.
2.	8	M.	Min. 52 Max. 73	Frequent upper respiratory infections. Total time onset 1 yr. Moderate course. Passing normal stools now. Activities still limited.	Low grade fever.
3.	27	F.	Min. 83 Max. 107	Total time since onset 16 mos. Pregnant 7 mos. at onset. Normal movements now Active again. Smooth course.	Low grade fever.
4.	60	M.	Min. 138	Total time since onset 13½ yrs. Frequent colds. 10-15 movements per day at start.	Low grade fever.
5.	15	M.	Min 138 Max. 173	Total time since onset 15½ mos. Frequent sore throat prior to tonsillectomy at 5 yrs. Lost 25 pounds since onset.	Low grade fever.
6	30	F.	Min. 126 Max. 90	Total time since onset 3¼ yrs. Diarrhea 1 yr. before treatment. Reacted well to retentions at first. Very stormy course. Ileostomized.	Septic. Up to 103.4° for 5½ weeks.
7.	42	F.	Min. 128 Max. 147	Total times since onset 2½ yrs Lost 39 pounds. Intermittent course.	Low grade fever.
8.	33	F.	Min. 120 Max. 131½	Total times since onset 5 yrs. Treatment 10 mos. Normal stools now.	
9.	23	M.	Min. 103 Max. 126	Total time since onset 2¼ yrs. Ten mos. before treatment. Stormy course throughout.	Septic. Up to 103° for 7 days.
10.	39	F.	Min. 100 Max. 180	Total time since onset 9½ yrs. Six yrs. before treatment.	Low grade fever.
11.	24	M.	Min. 135 Max. 182	Total time since onset 7 yrs. Four yrs. before treatment. Invalid for 2 yrs. previous to retentions. Normal activities and weight now.	Low grade fever.
12.	31	M.	Min. 146 Max. 167	Total time since onset 8 yrs. Five yrs. before treatment. Responded well to retentions but then developed amebic infection with polyposis and since then bedridden.	Low grade with occasional pe riods of septic fever.
13.	69	M.	No change	Total time since onset 2½ yrs. Three days before treatment. Followed suprapubic prostatectomy. Condition cleared up on five days' treatment. No recurrence.	Postoperative type.
14.	36	F.	Min. 100 Max. 125	Total time since onset 8 yrs. Six yrs. before treatment. Had been confined to bed for three mos. with first attack. Normal activities now.	Low grade fever.
15.	56	F.	Min. 75 Max. 90	Total time since onset 6 yrs. Five yrs. before treatment. Frequent severe respiratory infections. Normal activities now.	High, septic on admission. Lo grade after treatment started.
16.	45	M.	Min. 161 Max. 174	Total time since onset 11 yrs. Total time since treatment 16 mos. Mild course. Normal activities now.	Normal.
17.	19	M.	Min. 124 Max. 180	Total time since onset 21 mos. Total time since treatment 20 mos. Mild course. Normal activities now.	Low grade fever.
18.	36	M.	Min. 145 Max. 158	Total time since onset 11 yrs. Total time since treatment 8 mos. Semi-invalid. Normal activities for past 2 mos.	Low grade fever.
19.	16	F.	Min. 87 Max. 116	Total time since onset 5 yrs. Total time since treatment 5 mos. Frequent small blood transfusions.	Septic to 103° for six weeks.
20.*	35	F.	Min. 70 Max. 110	Total time since onset 6 yrs. Total time since treatment 1 yr.	Low grade fever.
21.*	33	F.	Min. 95 Max. 120	Total time since onset 6 yrs. Total time before treatment 5 yrs. Stormy course. Up to 12 stools per day.	Septic. Up to 102.8° for on month.
22.*	37	M.	Min. 125 Max. 143	Total time since onset 1 yr. Total time before treatment 3 weeks. Mild course.	Low grade fever.
23.*	37	M.	Aver. 200 Little change	Loose movements as long as he could remember. Rectal hemorrhage 5 yrs. ago. Total time since treatment 6 mos. Normal activities and working hard now.	Normal.
24.*	39	F.	Aver. 130 Little change	Total time since onset 18 yrs. Total time before treatment 17 yrs. Told she had ulceratve colitis 17 years ago.	Low grade fever.
25.*	31	M.	No change	Total time since onset 7 mos. Total time since treatment 6 mos.	Low grade fever.

At this time 84% of our cases are enjoying usual activities and better health than they have experienced in years.

310 S. Michigan Avenue.

11107 S. Longwood Drive.

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ood	Max.	Min.	X-Ray	Proctoscopic	Complications	Retentions
).	64	33	Not done	Small proctoscope showed ulceration	Bullous impetigo Bartholinitis	Did not tolerate. Better on acriflavine
b.c.	4,100,000	2,400,000				
.b.c	7,200	6,450				
).	79		Not done	1. Typical	None.	Well tolerated.
b.c	4,200,000			2. Normal mucous membrane.		
.b.c.	12,000					
).	82	68	Narrowing with loss of haustral markings in rectosig. and sigmoid.	1. Severe inflammation. Markedly narrowed.	None.	Well tolerated.
b.c.	4,500,000	3,820,000		2. Normal.		
.b.c.	9,000	10,500				
).	77		Rectum and rectosigmoid narrowed+++	1. Severe inflammation.	None.	Well tolerated.
b.c.	4,150,000			2. Recently reported in good health.		
.b.c.	8,100					
).	90	76	Descending colon loss of haustral markings.	1. Typical.	None.	Well tolerated.
b.c.	5,150,000	4,200,000		2. Normal at 3 mos.		
b.c.	9,200	11,200				
).	80	50	Descending colon narrowed.	1. Severe inflammation.	Arthritis Erythema nodosum; rectal fistula.	First good and then no longer tolerated.
).c.	4,200,000	3,000,000		2. Almost normal.		
.b.c.	6,200	12,000		3. Very severe inflamtion.		
).	90	70	Narrowing of rectosigmoid.	1. Severe diffuse ulceration.	None.	Well tolerated.
).c.	4,300,000	4,000,000		2. Normal.		
b.c.	7,500	10,400				
).	86	75	Rectum, rectosig. and descending colon. Narrowed and shortened.	1. Typical.	None.	Well tolerated.
b.c.	4,450,000	3,950,000		2. Well healed at 6 mos.		
.b.c.	13,600	12,000				
).	76	60	Lower half of colon narrowed.	Small proctoscope used. Typical appearance.	Thrombophlebitis.	Well tolerated at first, then poorly.
).c.	4,100,000	3,750,000				
b.c.	7,400	12,800				
).	88	70	Lower half of colon and rectum involved.	1. Typical.	None.	Well tolerated.
).c.	4,830,000	4,100,000		2. Normal.		
.b.c.	8,000	9,700				
).	86	70	Slight narrowing and loss of haustral markings in sigmoid.	1. Typical.	None.	Well tolerated.
).c.	4,850,000	4,100,000		2. Normal.		
b.c.	7,600	11,200				
b.	85	50	Marked constriction of entire colon except in cecum and ascending portion.	Typical with polypi during last 18 mos.	Polyposis.	Well tolerated at first, now not at all.
).c.	4,600,000	3,900,000				
b.c.	7,200	11,000				
).	70		Not done.	1. Typical diffuse severe inflammation.	None.	Well tolerated.
).c.	3,950,000			2. Normal.		
b.c.	9,800					
).	87	63	Sigmoid and descending colon smooth margins. No narrowing.	1. Typical wih narrowing.	None.	Well tolerated.
).c.	4,940,000	3,730,000		2. Normal.		
b.c.	8,700	12,600				
).	85	60	Margins of sigmoid and descending colon smooth.	1. Typical.	None.	Well tolerated.
).c.	4,450,000	3,370,000		2. Normal.		
b.c.	7,700	8,400				
).	84	72	Not done.	1. Typical.	None.	Well tolerated.
).c.	4,800,000	4,000,000		2. Well healed.		
b.c.	8,750	10,600				
).	88	75	Not done.	1. Typical.	None.	Well tolerated.
).c.	4,830,000	4,000,000		2. Healed.		
b.c.	7,200	10,100				
).	84	70	Narrowing and loss of haustral markings below splenic flex.	1. Typical.	None.	Well tolerated.
).c.	4,440,000	3,800,000		2. Well healed.		
b.c.	9,200	11,000				
).	76	60	Narrowing and loss of haustral markings below splenic flex.	1. Typical.	Arthritis.	Well tolerated.
).c.	4,340,000	3,300,000		2. Good healing.		
b.c.	9,800	16,000				
.	85	45	Narrowing with loss haustral markings beyond mid-transverse colon.	1. Typical.	None.	Well tolerated.
).c.	4,000,000	3,360,000		2. Normal.		
b.c.	14,200	7,600				
.	75	40	Not done.	1. Typical.	None.	Well tolerated.
).c.	4,100,000	2,000,000		2. Normal.		
b.c.	11,400	12,900				
.	95		Not done.	1. Moderate inflammation.	None.	Well tolerated.
).c.	5,000,000			2. Normal.		
b.c.	8,200					
.	85		Narrowing with absence of haustral markings in sigmoid and descending colon.	1. Typical.	None.	Well tolerated.
).c.	5,330,000			2. Normal.		
b.c.	11,250					
.	75		Narrowing with a loss of haustral markings in lower third des. colon.	1. Typical, some narrowing.	None.	Well tolerated.
).c.	4,490,000			2. Normal.		
b.c.	12,900					
.	75		Not done.	1. Typical acute inflammation with punctate hemorrhagic areas.	None.	Well tolerated.
).c.	4,380,000			2. Normal.		
b.c.	9,850					

THE VALUE OF ONE INJECTION OF ALUM PRECIPITATED TOXOID IN CONTROLLING DIPHTHERIA

C. H. Benning, M.D., C.P.H.
ROYAL OAK, MICH.

It was the practice in Peoria, Illinois, to use at least two injections of alum precipitated toxoid or fluid toxoid as an immunizing agent against diphtheria up to the year 1937. At that time the author of this monograph decided to introduce the use of one injection of alum precipitated toxoid as the sole measure of immunizing large numbers of children.

The program of mass inoculation of school children was undertaken after due deliberation with the public relations committee of the Peoria City Medical Society. The reason for mass immunization was that, prior to 1936, diphtheria has been extremely prevalent in Peoria. In 1935 one of the worst epidemics of diphtheria was recorded in this city. One hundred and eighteen cases of diphtheria had been reported to the City Health Department and fourteen deaths had occurred. Thirteen of the fourteen deaths were in children. Every effort had been made in prior years to persuade parents to take their children to the family physician for preventive treatments against this dread disease of childhood. Unfortunately, the public did not respond to the invitation and diphtheria became an endemic condition with frequent exacerbations to epidemic Form.

The means of approach to the problem by the director of health of the schools was:

1. Frequent newspaper articles on the danger of the disease.

2. The necessity for immediate inoculation against the disease.

3. A survey of all the grade schools to discover the number of unprotected children.

A mimeographed letter was sent to the parents of all children in the public schools up to and including the fifth grade requesting their diphtheria and smallpox immunization status. These, when returned, were sorted and tabulated as to previous inoculation, refusal or willingness to go to the family physician for the necessary treatments, and finally, those who stated they could not afford to pay the family physician his regular fee. This last group were sent a printed blank on which the parents requested inoculation for their children against diphtheria and signed their names under a statement clearly stating their inability to pay the physician's regular fee.

One thousand six hundred and ninety-one children in the twenty-one grade schools were given the one injection of alum precipitated toxoid as supplied through the State Health Department at Springfield. No untoward reactions of a serious nature occurred as far as could be ascertained by the school health department.

The method of cleansing the arm, used prior to injection of toxoid was that recommended by Mustard (Rural Health Practice, page 327. Harry S. Mustard, 1936). Plain alcohol is recommended and it is totally unnecessary to use any other antiseptic, according to my observation for many years. The injection should be made subcutaneously and not intramuscularly. Small sterile abscesses are liable to occur if the toxoid is injected into the muscular tissue. The injection was made on the outer side of the upper arm as being most convenient and allowing the operator a firm grasp of the child's arm, which helps to prevent the danger of a needle breaking off in the tissues.

A labor-saving device for sterilizing needles in a wholesale way was used and is on exhibit here if you desire to inspect it. Fifty or more needles are easily sterilized at one time and are less subject to contamination after sterilization.

Each child had to present a blank signed by the parents at the time of inoculation so as to prevent any unexpected disagreeableness from a parent whose child might develop a temporary sore arm. The number of severe reactions following the injection of alum precipitated toxoid was remarkably small and limited to one or two sterile abscesses. No cases of anaphalaxis were recorded.

According to the figures of Park (Public Health and Hygiene, Chapter IV, page 67, 1928) 81.5% of all deaths from diphtheria in New York occur in children under five years of age, and in the age-group five to nine—17%. So that it is permissible to axiomize that concentration on children from one to nine years of age, for diphtheria prevention will reduce materially the 98.5% mortality in this age-group. The morbidity of this disease is stated to be 65.5% for ages one to nine. These figures are taken from the White House Conference Reports, Volume

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II-B, and refer to the Massachusetts experience for the years 1920 to 1929.

Boyd, in his latest book, "Preventive Medicine," published in 1936, page 97, says "Current practice sanctions the administration of a single injection of 1 cc. of alum precipitated toxoid to children up to six years of age. In older children and adults a second dose of the same amount may be given one week later. It has been found that, in the case of children under six, 90% of Schick reactions become negative within three weeks of inoculation."

Back in June, 1935, an article appeared in the A. P. H. A. Journal headed "Recommended Procedures for Diphtheria Immunization." The Sub-Committee on Evaluation of Administrative Practices of the Committee on Administrative Practice of the A. P. H. A. offers the following as representing the best in immunizing against diphtheria:

Children from six months to six years—one injection of 1 cc. of alum precipitated toxoid.

For older children—T A T in three doses.

Since the publication of this article I have had the pleasure of talking to several members of the Sub-Committee on Diphtheria. It is the consensus of their opinions that 1 cc. of alum precipitated toxoid is sufficient to curtail and practically wipe out diphtheria in any city if given to children of one to nine years of age consistently. The toxoid should be of a high antigenic potency, at least as high as that required by the National Institute of Health. 80% of guinea-pigs given it must be sufficiently immunized in ten weeks so as not to succumb to five M.L.D.'s of diphtheria toxin within ten days. Public health workers ordinarily say about 90% to 95% of children given toxoid are immune for life. This is probably true, but the permanence of the immunity seems not entirely the result of the toxoid, other factors playing their part.

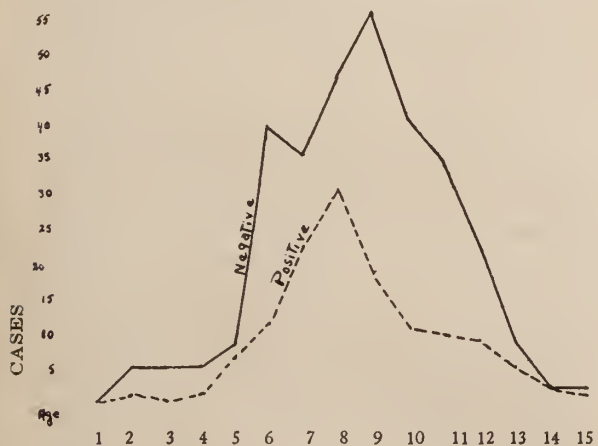


Chart 1. Schick reactions in 425 children after one injection of alum precipitates toxoid.
Negative, 304; per cent of total..... 71.53
Positive, 121; per cent of total..... 28.47

In my experience the statement that 90-95% of children six years of age and under are made immune by one injection of alum precipitated toxoid does not hold true, but I have found 70-80% of children in this age-group to be Schick negative six months to one year after inoculation. Park's figures of 90-95% negative Schicks were read three to four weeks after immunization. There is no doubt that a proportion of these negatives would become positive again within six to twelve months. However, it is my opinion that even with 70-80% of negatives at the end of one year in 50 per cent of the school children diphtheria will be an extremely rare disease. If this immunizing procedure is carried out systematically it is more than probable that diphtheria will practically disappear from a community.

In the Royal Oak District of the Oakland County Health Department, which comprises 80,000 inhabitants, two doses of fluid toxoid were given as routine during the years 1933 and 1934. Late in 1934, and as a routine procedure since that period, one injection of alum precipitated toxoid was given. The number of cases of diphtheria recorded in that period is herewith presented:

1933—5 cases.
1934—3 cases.
1935—1 case.
1936—3 cases.
1937—1 case.

It is apparent that the change from fluid toxoid to alum precipitated toxoid made no difference if judged by the number of cases of diphtheria in the area studied.

Let us now turn to the figures obtained in the Peoria, Illinois, study.

Five schools in which 596 pupils had received toxoid one year ago were chosen for the check-up. A total of 1691 children in the twenty-one grade schools had received the one injection of alum precipitated toxoid. This toxoid was the

standard product of the State Health Department. The Schick test was given to 434 pupils of the 596 who brought consent slips from their parents. 425 returned for the Schick reading and nine were absent for some reason or other. Three hundred and four, or 71.53% of the total of 425 Schicked were negative, and 121, or 28.47% were positive. It is quite possible that the percentage of negatives would have increased if controls had been used. The value of control tests would have ruled out a certain percentage of pseudo-positives. As far as we could ascertain, none of the children in this group given toxoid or Schicked had ever been previously inoculated.

With almost 72% of children ranging in age from one year to fifteen years, Schick negative after one year, it is reasonable to expect that, as the years go by with the routine use of one injection of alum precipitated toxoid, the percentage of positives will decrease. Inoculation of the pre-school group is the most important phase of diphtheria immunization, and as can be seen on the attached graph, the number of children five years of age and under being brought to the clinic was relatively small—31 or only 7.3% of the total number. The procedure in reading the Schicks was to call all doubtful reactions positive so that there could be no possibility of erring on the wrong side of the ledger.

The Commissioner of Health of Peoria, who assisted me both with the inoculation of the alum precipitated toxoid and the giving and reading of Schicks, feels, I believe, that one injection of the alum precipitated toxoid is a useful and satisfactory method of controlling the spread of diphtheria among children. I might further add that it is my belief that the giving of the Schick is not a public health measure. Let me qualify this remark by saying that it is useful in just such a study as this to ascertain the percentage of immunity obtained solely as an academic point. If parents desire to find out the results of the inoculation the children can be Schicked at the private physician's office or in a clinic, but not as a routine procedure in the schools.

The method of giving the Schick test was routine. The flexor surface of the forearm was cleansed in its middle third with rubbing alcohol and allowed to dry, then .1 to .2 of a cc. of Schick material was injected intracutaneously. It is most important that the injection is intracutaneously and not subcutaneously. A 25-gauge needle and tuberculin syringe were used. The Schick test was read on the fourth day after injection at which time the reaction has usually reached its maximum intensity.

SUMMARY:

Four hundred and twenty-five children were Schicked one year after receiving one injection of alum precipitated toxoid. Three hundred and four, or 71.53% were negative and 121, or 28.47% were positive. It is my belief that the percentage of negatives obtained after the one injection of toxoid is satisfactory, and that one injection of alum precipitated toxoid is a safe procedure to follow in immunizing a large group of children one to nine years of age.

CONCLUSION:

The use of one injection of alum precipitated toxoid as a method of immunization against diphtheria has been in use by various health agencies for some time throughout the country, with excellent results. Its use in Peoria if continued will undoubtedly be as beneficial. The obvious economy in time is real, and parents will usually attend a clinic or doctor's office for one injection of a serum without much urging. This is an added advantage to be given serious consideration.

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DISCUSSION

Dr. Arlington Ailes, LaSalle: We have been using one dose of alum precipitated toxoid since 1935. Formerly we used two doses of fluid toxin. I have some figures here for it. We immunize in our pre-school clinics by giving one dose and then we do not test the children until the first grade of school. All those who want to be treated in that first grade we treat. Then in the second grade we test again, and treat the positives. Of course this is all done with parental consent. Here are some figures for 1936. We got in that year 58% negative with one dose. If they are still positive we treat them again. With two doses we got 79% negative. Some of them are still positive in the second grade and we give them a third dose. With those getting three doses we got 85% negative. We have a record of 28 children with four doses in whom we got 86% negative.

Dr. Winston H. Tucker, Evanston: One year you give one dose and Schick them the next year, and one dose more and Schick them the next year?

Dr. Ailes: Yes. There is always the interval of

one year between the Schicking, and sometimes there is an interval as long as five years. We do not give two doses three or four weeks apart, but one dose at a time, that is, if the child is given a dose at nine months of age in our infants' welfare clinic, it is not tested until it goes to school, which is six years of age, or in the parochial school, five years of age. Out of all those treated in this manner, with one, two and three doses we got a grand total of 79% negative. In checking all the children we finally got 67% negative and 80% have received one or more doses of the toxoid.

For 1937, we had 216 children tested without any treatment and 7.5% were negative; 234 had received one dose and 70% became negative; 220 had received two doses and 75% became negative; 69 had received three doses and 93% became negative. We have three who received four doses and only 67% were negative, and two received five doses and 50% were negative. After they receive three doses it does not seem to make much difference if they receive the fourth, fifth or sixth dose. A few years ago we had some that received six doses and they did not seem to be capable of becoming immune. This year, 1937, of all the children treated we had 75% to become negative. Of course we keep at them. If they do not become negative with the first dose, we test and treat again until they receive a third dose, after which they are tested again, but not usually tested further.

Dr. Tucker: Have you had a case of diphtheria in those that had the alum precipitated toxoid?

Dr. Ailes: We have not to my knowledge had a case of diphtheria in the children we have treated, even with one dose. We had one death last year from diphtheria but the child had received no treatments whatever. We have had four or five cases of diphtheria but most of them were in adults.

Dr. G. Koehler, Springfield: The children in the last two years, were they pre-school age or school children?

Dr. Ailes: These were school children. Those who received two and three doses were school children, first and second grades. We do not treat them in the third grade any more. I might add that we give this alum precipitated toxoid in doses of 1½ c.c. and never had a sterile or other kind of abscess. I might say further that we do not change our needles, but do alterate with two syringes, keeping the needle of the one not in use immersed in a pledget of cotton sopping wet with alcohol. We sterilize in the beginning and wipe the needle after each insertion on the pledget of cotton wet with alcohol. We sterilize the arm with alcohol. I have been giving the various tests and treatments, including many thousands, for several years, and never had a sterile abscess nor an infection.

Dr. Winston H. Tucker, Evanston: I do not use alum precipitated toxoid because I do not feel that one injection of this product confers a satisfactory degree of immunity agains diphtheria. While on the staff of the State Department of Health I made a comparative study of the value of one injection of alum precipitated toxoid as contrasted to three injections of plain dihptheria toxoid, and found that one dose of alum precipitated toxoid resulted in negative Schick tests in 72% of the children six months later, whereas 92% of the children who had received three doses of plain diphtheria toxoid were Schick negative after a comparable period. From an administrative point of view I appreciate the convenience of a single injection of alum precipitated toxoid, but in communities carrying out well-organized public health programs it is not difficult to have children return at three week intervals for three injections of plain toxoid. Following three injections of plain toxoid the level of circulating antitoxin is raised to a much higher level than is obtained following one injection of alum toxoid. Fraser and his co-workers have demonstrated this fact by making blood titrations for diphtheria antitoxin.

Accordingly, irrespective of the recommendation of the subcommittee on administrative practice of the American Public Health Association, I do not feel that 71.53% negative Schick tests, as obtained by Dr. Benning with one dose of alum toxoid in Peoria, is adequate to protect a community against this dreaded disease. It is true that the percentage of negative Schicks obtained by Dr. Benning will prevent a wide-spread epidemic of diphtheria, but deaths from diphtheria will occur in the almost 30% of the child population who are not protected. It is my feeling that it is the responsibility of the Health Officer in every community to make every effort to protect a high percentage of the child population against diphtheria, and in Evanston our diphtheria immunization program results in such protection in 90% of grade school children. Excellent cooperation is obtained from practicing physicians in our community, and a large percentage of infants are immunized against diphtheria between the ages of 9 and 12 months, and the same is true in children of pre-school age. As for myself, I intend to continue to employ and recommend to Health Officers that three injections of 1 c.c. each of plain diphtheria toxoid be used in diphtheria immunization with intervals of three weeks intervening, and a follow-up Schick test six months after the last injection. Inasmuch as the chief value claimed for alum toxoid is that only one injection is necessary, I have discarded this product entirely in favor of three injections of plain dihptheria toxoid.

Dr. Sandor Horwitz, Peoria: Last year we had a diphtheria campaign in East Peoria. We gave the Schick test to 465 children above the age of ten with about 60% positives. After the Schick test was given to these children above the age of ten we inaugurated a campaign and inoculated about 560 children. All of those 560 received two inoculations of alum precipitate. The Schick test resulted in over 98% negatives.

Dr. Tucker: How long after your injection did you do one of Schick?

Dr. Horwitz: We did it six months apart.

Dr. W. W. Bauer, Chicago: I would like to record my disagreement, since that seems to be in order, with the statement that the Schick test subsequent to immunization is not a public health measure. In my judgment it very definitely is a public health measure and these are my reasons: In the first place, I think the majority of parents want to know what the results have been, not only for the community but for their own family, and I think they are entitled to know it. For another thing, you have a percentage of negatives in your series where you do Schick tests for the purposes of statistics and research. You have a percentage of positives there and, presumably, those positives, if our Schick test is any good at all, are your nearest approach to failure, if not actual failure, in immunization. If you get diphtheria reported in any cases subsequent to immunization you will get it in those positives and, for your own protection, it seems to me that as health officers you want to have a defense in your records to show that you have made Schick tests and that you have a record not only of the number of children presumably immunized but of the actual children who were Schick negative as the result of the immunization. So, I think very definitely that the health department has an obligation to make a checkup Schick test available, even though we have long since abandoned the idea of doing a preliminary Schick and immunizing only positives.

Dr. Benning, in closing: I am very glad my talk brought out some differences of opinion because it is only through differences of opinion that we progress. On the value of the toxoid I did not include the large bibliography. I have such a bibliography with me from not only this country but Europe in the use of alum precipitated toxoid, and I think it is the general opinion today that alum precipitated toxoid is superior to the older product. The State of New York, one of the pioneer states in diphtheria immunization, is using one injection of alum precipitated toxoid at the present time and they find it of value in controlling diphtheria. So is the state of Michigan, and I think several other states which are backing such a practice at the present time. So much for that.

As to the value of the Schick test as a public health measure, we as public health men, I believe, are interested in groups, not individuals. We are to see that we reduce diphtheria to a minimum. If the parent wishes to find out definitely whether his child is immunized I think he should go to some clinic where they take them in mass lots. I think you will find that I agree with Mustard in his latest book on public health in this statement of mine.

Again, with regard to the Schick test, there are on record cases with negative Schicks developing diphtheria and, when you give a certificate of a negative Schick telling that parent that his child is absolutely protected against diphtheria and that child does get diphtheria, you have an awful lot of explaining to do, and it has happened. There are cases on record. That is all.

DIARRHEA AS AN INSTITUTIONAL PROBLEM*

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AND
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Diarrhea is a symptom-complex of many infectious, as well as organic and functional disturbances to which man is heir. It is especially prevalent in institutions housing large numbers of individuals, and presents an interesting, sometimes confusing, and very often menacing problem. This paper concerns a study of the etiology, diagnosis, and management of 1351 cases of diarrhea encountered in the Elgin State Hospital during the past three years (See Chart 1). Among those afflicted were physicians, nurses, employees, members of their families, resident and newly admitted patients, collectively representing a fairly well-balanced cross section of the entire

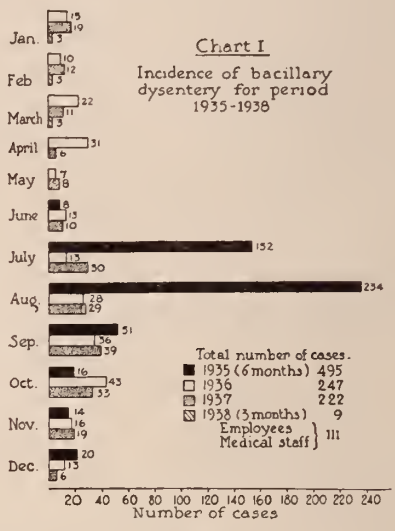


CHART I.

The distribution of new cases of bacillary dysentery over a period of nearly three years showing the peak in July and August of 1935, and a rapid diminution to an insignificant number in 1938.

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**Consultant Proctologist Elgin, Dixon and Chicago State Hospitals.

Read before Physicians Association, Department of Public Welfare, State of Illinois, at Illinois State Medical Society, Springfield, May 17, 1938.

population of about 5200. The greatest number of cases were observed the first year during an epidemic of bacillary dysentery. Subsequently, as a result of measures instituted for its control, the number of reported diarrhea cases diminished perceptibly.

Diarrhea may be defined as a conditon resulting from either extrinsic or intrinsic factors producing an abnormally frequent evacuation of liquid stools. Since the term is applied only as a symptom denoting the passage of liquid stools, it not only embodies those forms due to disease of the gastrointestinal tract, but is also indicative of conditions arising outside of this tract. It may occur even though there is no pathological change in the wall of the bowel itself. There are three general conditions capable of producing this symptom: 1. Toxic states; 2. Partial mechanical obstructions; and, 3. Functional disturbances of the nervous system.

In toxic states the stimulation of the bowel by irritating substances causes the stool to be rapidly carried into the distal colon and expelled. Absorption is markedly diminished. A concomittant transudation of fluids from the blood stream and an increased activity of the mucus-forming glands considerably increases the fluid content of the stool. In addition, as a result of the irritation or toxemia there may be marked changes in the pathogenic activity of the innumerable microorganisms normal to the large bowel, due either to lowered resistance of the host or the ingestion of a virulent organism. Considerable pus is formed which together with the exudation of blood and serum from the inflamed and ulcerated mucous membrane serves to increase the volume and create the essential characteristic stool of the acute bowel.

In partial obstruction, the peristalsic action is compensatory. The bowel, partially obstructed by growths, foreign bodies, strictures, edema, with or without inflammation and ulceration, attempts to rid itself of its contents by forceful, and often painful, movements. Only liquid portions are capable of being expelled, and, as a result, the frequency with which this process is repeated is directly proportional to the size of the obstruction and the amount of fecal contents.

Affections of the central nervous system may, and do adversely influence the function of the intestinal tract. Whether the stimulation be of glandular, allergic, organic or of extraneous origin, such as highly emotional states, excitement, and fright, it is accompanied by an accentuated activity and peristalsis of the intestinal tract due to increased excitability of the nerves of the intestine itself. There is literally a pouring out of mucus which may simulate a diarrhea, especially when it mixes with and tends to dilute the stool. It is self-limited and does not produce changes except an occasional puffiness and a non-inflammatory edema of the mucosa.

Diarrhea may be acute or chronic depending upon the cause and the duration of the symptoms.

ETIOLOGIC FACTORS

The greatest number of cases were acute (Chart 2). 1075 were caused by bacillary dysentery, which we shall discuss in detail; 130 by gastrointestinal upset; 66 by cathartics; 30 by fecal impactions, and 2 by paratyphoid (salmonella morgani). An impressively small percentage (3.6 of the 1351 cases) were chronic in character. In a detailed study of 334 cases of bacillary dysentery it was found that in 92% the symptoms persisted for from four days to eight weeks, and 8% from eight weeks to two years. However, were we to include all those whose symptoms continued unabated and who upon repeated sigmoidscopic examination exhibited findings of a chronic infection, the percentage would be increased to 17.7. Nevertheless, this was not done, and all cases were omitted who after two years

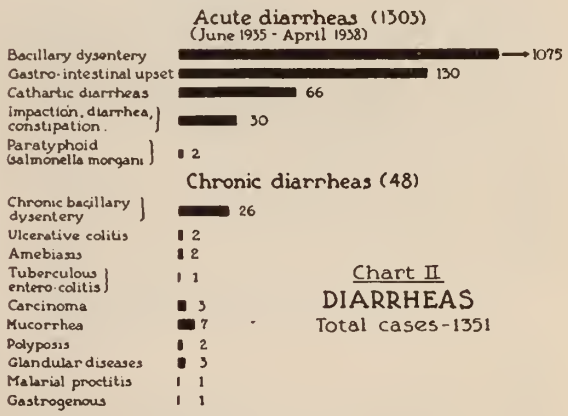


CHART II.

The preponderance of acute over chronic diarrhea in the ratio of 27 to 1 is shown. Bacillary dysentery accounted for 81% of the cases; fourteen other functional and organic diseases for the balance of 19%.

did not recur or display evidence of a bowel involvement. This does not, however, by any means preclude the possibility of a recurrence or of a development of chronic ulcerative colitis. Therefore, twenty-six cases were diagnosed as chronic bacillary dysentery. They exhibited lesions typically characteristic of chronic ulcerative colitis, and identical with the pathological changes noted in the bowel of two newly admitted patients whose history and findings suggested a diagnosis of idiopathic non-specific ulcerative colitis. Of the remaining twenty-two, one was due to tuberculosis, two to amebiasis, two to polyposis, three to carcinoma, seven to mucorrhea (mucous colitis), one to achlorhydria, two to hyperthyroidism and one to diabetes mellitus. A paretic receiving malarial treatment developed severe proctitis with diarrhea.

At a glance one is struck by the disproportionate incidence of diarrhea caused by conditions other than bacillary dysentery. 81% can be attributed to bacillary dysentery, and the balance of 19% to fourteen other causes. This is due to the fact that during the peak of the epidemic which occurred in the latter half of 1935, 10.9% of the population was affected (See Chart 3).

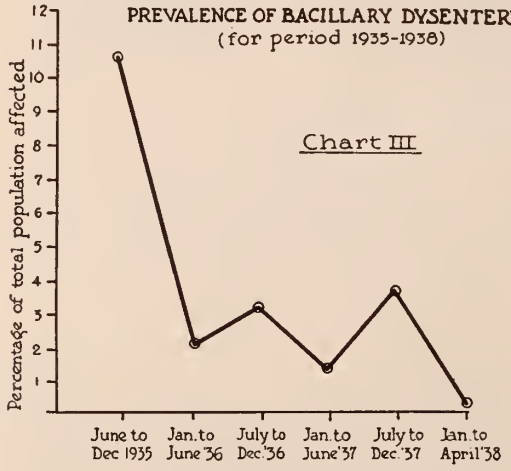


CHART III.

This graph depicts the percentage of all the inhabitants involved in this epidemic; the sudden drop in prevalence in the first six months, a somewhat stationary period of a year and a half and then another rapid reduction to less than .2 of 1% of the total population.

By the first of the year 1936 there was a drop to 2% in the prevalence of this disease, which, with the continued employment of the Elgin plan of control has gradually declined, so that in the first three months of 1938 we have observed only nine cases, amounting to 0.2%. It is therefore apparent that the major problem is bacillary dysentery, and that when this is properly controlled diarrhea becomes a minor issue. The usual periodic inspection of water and milk supply is insufficient as shown by the sudden and widespread outbreak in this institution where such inspection has long been routine. Complete cooperation is necessary and every suspicious case of gastrointestinal disturbance should be reported, examined and properly controlled. Then, and only then, can the situation be kept in hand at all times, and the possibilities of a serious outbreak can be minimized or entirely prevented. It is really amazing that this disease of high mortality and morbidity should not be as vigorously controlled as any other of a communicable nature.

DIAGNOSTIC APPROACH

The usual physical, cultural, serological and biopsy methods were employed but thorough and oft repeated sigmoidoscopic examinations enabled us to make an early diagnosis, to differentiate the dysenteric from the non-dysenteric lesions, to determine other causes for diarrhea (if within the reach of the scope) and to take specimens for culture and study. This procedure was exceedingly advantageous in facilitating the examination of large numbers of individuals quickly and efficiently, thereby aiding in the process of elimination and of control of the epidemic. Although most authors have cautioned against the use of a sigmoidoscope in an acutely inflamed bowel because of the dangers of trauma or perforation, we find that the proper and skillful use of a well-illuminated instrument of large caliber is not only *not dangerous* or detrimental but is indispensable. It is also quite essential to inflate the bowel to its full extent for better visualization of the exposed mucosa. This is particularly imperative in mild cases. No adverse effects can be produced by air except possibly a temporary cramp and discomfort, which is insignificant when compared to the advantages gained by direct examination of the tissues involved. Time does not permit even a brief discussion of the differential diagnosis in our series of cases. Most important is a detailed descriptive account of bacillary dysentery from a cultural, serological and sigmoidoscopic viewpoint and its management.

DIAGNOSIS OF BACILLARY DYSENTERY

The diagnosis of bacillary dysentery presents a difficult and controversial problem. The clinical manifestations may not correspond at all to the degree of mucosal involvement. A patient may be completely prostrated and yet the bowel be only mildly affected. On the other hand, the reverse may be true, and the patient makes no complaint at all despite an ulcerated mucosa.

The value of agglutination tests has been far overestimated. No specific agglutination reaction can be regarded as being diagnostic, no matter what the titre may be. In our opinion, and this is based upon a study of over 3500 serological tests performed upon dysenteric and non-dysenteric patients, it is simply a confirmatory test.

The cultivation and isolation of the offending organism is exceedingly difficult. More than 2500 specimens were taken in this series, 400 being immediately cultured, and the balance twelve to twenty-four hours later; but only ½ to 1% were found to be positive for shigella paradysenteriae of Flexner. Significant is the fact that a positive culture could never be obtained a second time in the same patient despite repeated cultures; that there was no definite lapse of time between the onset and the acquisition of a positive culture; and that the objective findings were identical in all cases, varying only in degree. A positive culture for bacillary dysentery definitely clinches the diagnosis, but a negative culture, even when repeated, in the presence of a characteristic proctoscopic and clinical picture of a bacillary infection, does not, by any means, exclude the diagnosis of this disease. Parenthetically, we might add, that in another series of cases, not in this institution, a decidedly higher percentage of positive cultures were obtained with the use of an entirely different medium. Does this not suggest that the means of cultivating and isolating the organism is at fault?

Rogers and Megaw[1] in their excellent book on tropical medicine state that both the gross and microscopic changes in the bowel are quite distinctive in bacillary dysentery. Felsen[2] also states that in the acute stage of bacillary dysentery the rectosigmoid is always involved, despite the fact that some patients do not complain or are not cognizant of the disease. We have performed more than 5416 sigmoidoscopic examinations upon diarhea and non-diarrhea cases in this institution alone, making comparative studies of varying conditions and diseases, in an effort to determine whether or not bacillary dysentery can be diagnosed by direct visualization. In no other condition involving the rectum and sigmoid, excepting perhaps amebiasis, was the appearance of the mucosa similar to that of bacillary dysentery. The changes in the mucosa are characteristic and comparable as a diagnostic feature to the skin and mucous membrane changes in certain exanthematous diseases.

There are four distinct stages observed sigmoidoscopically in bacillary dysentery; the mild, moderate, intense and ulcerated (See Chart 4).

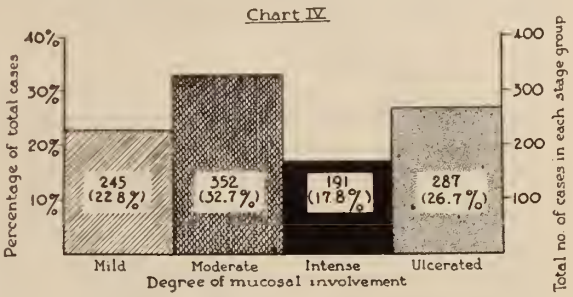


CHART IV.

An intensive and repeated sigmoidoscopic study revealed that there are changes produced in the bowel which may be considered distinctly pathognomonic of bacillary dysentery.

In *the mild type,* 22.8% of all the cases, there is a diffuse hyperemia of the mucosa which should not be confused with a simple congestion. This is often observed in the transitional stage of the disease and has led us to believe as previously reported[3] that the healing process begins at the distal end of the bowel. On the other hand we have consistently noted that the hyperemic changes would gradually spread from above downwards. This phenomenon has been also observed in the chronic cases. However, it is in this type of case that an error may be committed as to diagnosis, but in the presence of an unaccounted-for foul liquid stool the patient should be carefully studied for at least forty-eight hours to determine the nature of the malady.

The *moderate hyperemic types* account for about 32.7% of the cases observed. Here there is a moderately diffuse inflammation, dull to bright red, and thickening of the mucosa, causing a complete obliteration of the network of blood vessels. The normal structures are somewhat

affected, and the valves slightly thickened, the lumen being filled with liquid stool mixed with mucopurulent exudate and often blood. In this type the inflammatory process does not penetrate deeper than the mucosa.

The intense type has been encountered in 17.8% of the cases. The mucosa is intensely inflamed, from a bright to a purplish red, extremely edematous, the normal structures being completely obliterated and the lumen proportionately reduced in diameter. Not only is the mucosa involved but the entire wall of the bowel. Areas of petechial hemmorhages may be seen and the mucosa is covered with liquid or dried mucopurulent exudate, and either frank or streaked blood. Within a few hours this may progress into the ulcerated stage.

In *the ulcerated type,* 26.7% of all cases, the lesions vary from pin point to many centimeters in diameter, are usually superficial, and covered with a whitish gray membrane. Parenthetically, it may be well to remember that these ulcers may be deep and penetrating, involving all the coats of the wall and even penetrating the bowel. The edges of these ulcers are neither prominent, elevated, nor more inflamed than the surrounding mucosa which characteristics differentiate them from the amebic ulcers. However, one does not always see an intensely inflamed mucosa in conjunction with ulcers; it may be only mildly or moderately hyperemic, but is always hyperemic. The lumen may be filled with a foul liquid stool mixed with mucopurulent exudate and blood, sometimes forming a long thick dirty gray sheet, tissue-like in consistency. More than occasionally we have observed a perfectly normal stool in a moderately hyperemic and ulcerated bowel in individuals who did not even know that they had ulcerative colitis of bacillary origin.

Of those who survive about 92% recover completely, the remainder develop chronic bacillary dysentery. The findings conform to the description aforementioned except that the continuous or repeated infections produce permanent and damaging changes in the bowel wall, quite comparable to our conception of the pathology in chronic ulcerative colitis and terminal ileitis.

The average mortality for the period has been 14%, the highest percentage occurring in 1935. Necropsy was performed upon nearly 30% of those who expired and, excluding an occasional case, the pathological involvement of the small (distal portion of ileum) and large bowel ranged from mild hyperemia of the mucosa to thickening and destruction of normal tissues of the entire wall by inflammation, ulceration and necrosis, with pseudopolypoid changes and granulomata. In two instances a penetrating ulcer with perforation was found in the cecum and in two more, specimens were obtained of typical regional ileitis and colitis with skip areas described by Crohn[4] and by Felsen.[2]

Only one-half of 1% were positive for shigella paradysenteriae of Flexner but the mucosal pictures in both the negative and positive cases were strikingly identical.

MANAGEMENT

The American Public Health Association[5] has suggested that groups of cases of acute diarrheal disorder should always be reported to the health officer at once, even in the absence of exact determination of the nature and origin of the disease. Rogers and Megaw[1] urge the importance of an immediate diagnosis as a means of preventing the spread of the disease and state that a positive culture cannot be obtained early enough to be of distinct advantage. Before embarking upon any plan for the eradication of this disease it is imperative to recognize the grave potentialities of diarrhea, especially in institutionalized patients. To procrastinate until this disease becomes endemic, or worse, epidemic, is folly.

The management of diarrhea evolved at the Elgin State Hospital (Chart V) which might well be designated as the "Elgin Plan" consists of:

1. Periodic inspection of the water, milk and food supply.
2. Installation of properly fitting screens and other devices for the destruction and control of flies.
3. Careful supervision of all patient food handlers with emphasis upon the need for personal cleanliness.
4. Proper and thorough cleansing and steaming of all food containers after serving each meal.
5. Sigmoidoscopic, cultural, and serological examination of every employe and patient who handles or is assigned to handle food in any capacity whatsoever. Any individual patient or employe who develops a diarrhea while engaged in this work, or is found to be suspicious on examination, must be dismissed until a diagnosis is made.
6. An individual who has been isolated for

bacillary dysentery must not be permitted to engage in any culinary capacity during the entire period of his employment or confinement in an institution.

7. Every case of diarrhea must be immediately reported, the patient isolated, examined and sigmoidoscoped, culture and blood taken and a diagnosis made as soon as possible. All suspicious cases must be kept in isolation and treated until an exact diagnosis is determined.

8. Provision should be made for adequate quarters to facilitate effective isolation and, subsequently, a quarantine period of at least one month.

9. Isolation wards should be provided with hot and cold water, toilets, and facilities for thoroughly cleansing and steaming food containers before being returned to the general kitchen; for the proper disposal or burning of all garbage collected in the wards; and for the disinfection of all linens before being sent to the laundry.

10. Sigmoidoscopy should be included in the routine examination of every patient admitted to an institution; and, if feasible, cultures should be taken. Every suspicious case must be immediately isolated and observed.

11. In the management of bacillary dysentery sigmoidoscopic examinations at frequent intervals are imperative in order to determine the progress being made by a patient. Under no circumstances should a patient be discharged from isolation until sigmoidoscopic examinations, made a week apart, reveal a normal mucosa for a distance of 20 to 30 cm. and the cultures are negative. When a patient is positive, three consecutive negative cultures are necessary before discharge.

V

MANAGEMENT OF INSTITUTIONAL DIARRHEA

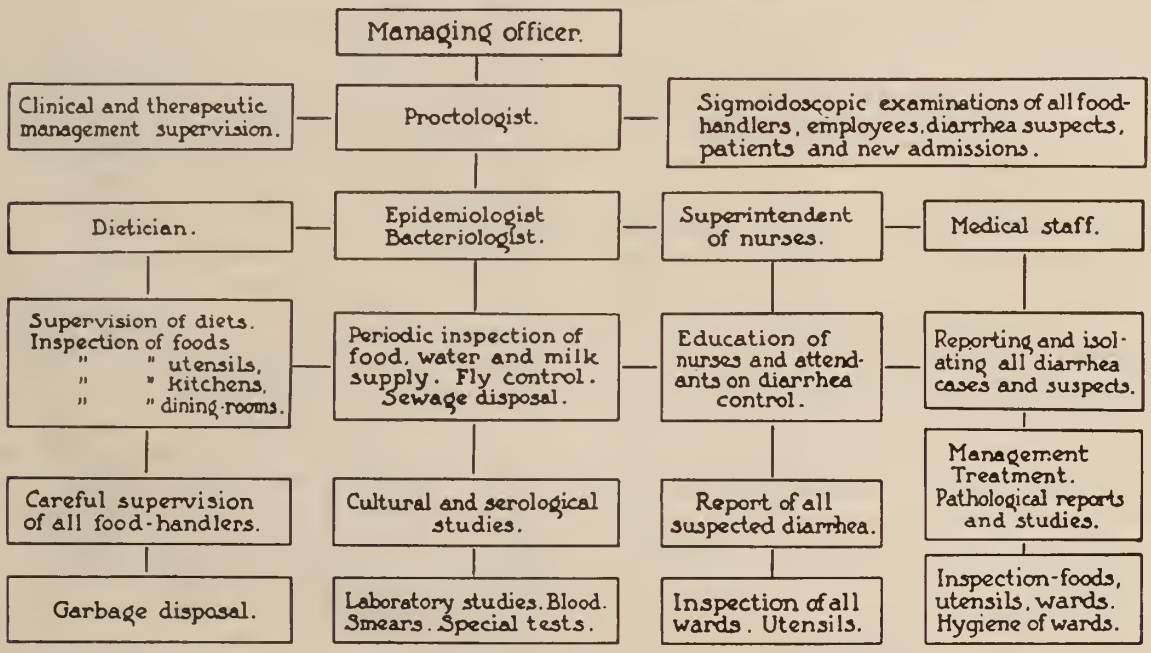


CHART V.

Schematic outline of the plan employed for the management of diarrhea and of eradication of bacillary dysentery at the Elgin State Hospital.

SUMMARY AND CONCLUSIONS

1. A study has been presented of 1351 cases of diarrhea occurring in the Elgin State Hospital during the past three years.

2. The greatest number of cases occurred during the first year of this study as a result of an epidemic of bacillary dysentery. Subsequent to this period, there was a marked decrease in the prevalence of this disease culminating in a pro-

portionate reduction in the total number of diarrhea cases observed.

3. The etiology was quite varied and may be conveniently divided into the infectious, parasitic, obstructive and functional types.

4. The diagnosis was predominantly based upon the results of direct visualization, with a sigmoidoscope, of the lesions involving the distal bowel, in addition to cultural, serological and tissue studies and physical examination.

5. The management of diarrhea depends entirely upon the cause. However, insomuch as 81% of the cases observed were dysentery, the first precept to be carried out in the control of diarrhea in institutions is not to depend entirely upon epidemiological studies and inspection of water and milk supply but to make every diarrhea case reportable and subject to immediate isolation until a diagnosis is made. This should be done immediately, if possible. Secondly, the inclusion, as a routine measure, of a sigmoidoscopic and cultural examination of all newly admitted patients; of every prospective food handler, employe or patient; and of every diarrhea suspect. Thirdly, apprising the employes of the potential dangers of diarrhea and enlisting their needed support and cooperation for fulfillment of the aforesaid program in the prevention and control of diarrhea, and in the eradication of dysentery.

185 N. Wabash Avenue.

DISCUSSION

Lloyd Arnold (Chicago): Just a word from the bacteriologist about the bacillus of dysentery, particularly as to the difficulty we have in diagnosis. The group of bacteria causing dysentery are a very variable group. They alter in morphology, in biochemical relation, alter in antigenecity and alter their toxicity. With a single strain classified by sugar fermentation, if you follow through week after week in artificial culture, you will change its name at least half a dozen times during a year of sub-culture. They are a very unstable group of bacteria. They seem to be an undifferentiated group.

From a bacteriological standpoint, our ideal as a diagnostic media for gastrointestinal pathogenic bacteria is to develop a media that will inhibit the growth of non-pathogenic forms and allow the pathogenic forms to grow. We are successful when we apply it to the causative agents of typhoid fever and paratyphoid fever. A dozen or more very successful media will do just that. They will suppress the coli and allow the typhoid and paratyphoid bacteria to grow. We do not possess a single medium that will allow the dysentery group to grow except that it allows everything else to grow. Anything that is detrimental, added to the media to suppress what we call the saprophytic growth will, at the same time, suppress the dysentery growth. So the bacteriologist is handicapped in culturing the dysentery group of bacteria for that reason.

I think the work of Dr. Block is very interesting. It actually opens up an avenue of diagnosis, inasmuch as our bacteriological information has been so sketchy and so incomplete.

If we consider as we usually do in bacteriology, that the dysentery bacteria reside in the lower end of the small intestine and the upper end of the large intestine, this is the cause of mucosa lesions varying in intensity, which corresponds to the severity of the symptoms. The lesions seldom extend to the sigmoid and rectum. What happens is that the toxins are absorbed into the blood stream from the lesions in the ilium, the cecum, and the ascending colon, and are excreted through the lower end of the large intestine. So the abnormal mucosa lesions that Dr. Block described are really excretory lesions at the point of excretion of the toxins.

Inasmuch as the chronic dysenteries, using our best medium, never give more than a 10% positive culture (where we can transfer to the best media within five minutes after we obtain the specimen, we never get more than 10% positive), if such a method as this can assist us, it is certainly worth while.

I think the management of the Elgin State Hospital is to be complimented on the way they have handled bacillary dysentery in an institution. When we get a foci started, the reservoir built up with the type of patients and the possibility of transmission and the difficulty of breaking that transmission, I think it represents an excellent piece of work.

Charles F. Read (Elgin): I would like to correct one statement made by Dr. Arnold, to the effect that the management of the Elgin State Hospital is to be especially complimented on the reduction of this morbidity rate due to bacillus dysentery. The entire credit, I believe, is due to our consultant, Dr. Block, to his advisor, Dr. Arnold, and his assistant, Dr. Greene, of our staff, who have done really a monumental piece of work. No one looking at these slides can imagine the amount of energy expended in making all the necessary tests, examinations and arrangements for the care of these cases. It has been a very fine piece of work, as you can see from the slides.

The morbidity has reduced from something like 10% or more to about two tenths of 1%. This is a very important matter, inasmuch as the mortality rate has been considerable, especially in the higher age brackets. Certainly the general staff of the institution has cooperated in following out the plan as developed by the doctors concerned, to isolate the patients, to treat them properly and to pick up new infections as rapidly as possible.

Recently I have read an article by Dr. K. C. Paddle in the January British Journal of Mental Science dealing with this problem, which is a very considerable one in England, and perhaps recognized as such there

more than it is here. I was surprised at the large number of positive cultures obtained by immediate inoculation of plates at the bedside or in a closely adjoining laboratory. There they have developed a serum which they feel is very effective. I wonder why it is that with our media and immediate making of cultures, we have not been more successful, in view of the statements of these British physicians.

Dr. Louis H. Block, Chicago (closing): I wish to thank Dr. Arnold and Dr. Read for their splendid discussion of our paper. I also wish to thank Dr. Read, Dr. Arnold, the members of the staff of the Elgin State Hospital and of the State Department of Public Health and the Laboratories of the University of Illinois for their unusually splendid cooperation.

In answer to Dr. Read's question as to why others report a greater percentage of positive cultures in their series of cases, I can only say that I am inclined to be somewhat skeptical about it. However, Dr. Arnold is better able to answer that question. I am sure it is not that our technique is at fault, but as far as the effect of immunization with vaccine or the treatment with serum is concerned our results have not been as glamorous as that reported by others. We have employed various types of serums, including convalescent serum and have used desiccated vaccine, the results of which we shall report in another paper, but we have not been as successful as some of the investigators in other institutions.

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THE TREATMENT OF INTRACRANIAL GLIOMAS

HAROLD C. VORIS, M. D.

CHICAGO

Gliomas are "cancers" in the sense that they are infiltrating neoplasms without any tumor capsule which tend to recur unless widely removed. True, they never (or at least very rarely) metastasize as do cancers elsewhere. Certain types may, however, spread throughout the cerebrospinal axis by tumor implants in the cerebrospinal fluid spaces. Unfortunately there is much confusion among the profession in general as to the prognosis and results of treatment of these tumors.

In most general discussions of neoplastic growths tumors of the brain are disregarded. Yet the problems of neoplastic growth are the same in the brain as elsewhere, though modified by certain important factors. The increased interest in intracranial tumors during the past few decades has made it apparent that they are more common than previously supposed. Whatever one may think of the individual value of the various statistical studies that have been published on this subject, taken in the aggregate, they point inescapably to that conclusion.

Intracranial tumors as a whole are too heterogeneous a group to be considered in common. The earlier attempts at classification separated the intrinsic tumors of the brain from the extrinsic. The former were known inclusively as gliomas, and until very recently, the only attempts at their further classification were abortive. As a matter of fact all encephalic tumors are not gliomas, as an occasional sarcoma or hemangiomatous tumor may arise from the connective tissues of the brain. However, these are relatively rare, and for our purposes we may consider the gliomas as representing those tumors which arise from the encephalon proper. As a result of the careful studies of Bailey and Cushing, and later of Penfield and many others, the origin and relatinship of the various types of gliomas is being gradually unraveled. The various classifications of gliomas in use at present are practically all based on the pioneer work of Bailey and Cushing and include, depending on their complexity, from seven to seventeen different types. The subject of the structural differences in these various types is a detailed and complicated one.

I want to emphasize that there are marked and important differences in the clinical behavior of the major groups of gliomas. Consequently the proper pathologic classification of a glioma aids in giving a prognosis and in determining suitable treatment. Conversely, careful clinical study of the patient will often lead to a correct preoperative diagnosis. This last is our ideal and is to be sought for here as in tumors elsewhere.

From Mercy Hospital-Loyola University Clinics and the Cook County Hospital.

Presented before Sections on Surgery and Radiology, 98th Annual Meeting, Illinois State Medical Society, Springfield, May 18, 1938.

The relative frequency of gliomas among intracranial tumors is a matter of interest. Cushing's series of over 2000 histologically verified intracranial tumors contained 42.6% gliomas. Adson had 43% of gliomas in 162 consecutive histologically verified cases of intracranial tumors. In a series of 314 histologically verified cases of frontal lobe tumor reported by Voris, Adson and Kernohan, 62% were gliomas. Obviously the last group was a selected one that contained a higher percentage of "encephalic" tumors. In the same series of frontal lobe tumors, 75% of the gliomas occurred during the fourth, fifth and sixth decades; there were nearly twices as many men as women with gliomas.

As previously stated, and as would be expected, there is considerable correlation between the microscopic evidences of malignancy and the clinical history of the patient. Bailey states the average "survival times" in months for the various types of gliomas wherever found. They range from a minimum of twelve and fifteen months for glioblastomas and medulloblastomas respectively to a maximum of sixty-six and seventy-six months for oligodendrogliomas and astrocytomas.

It is my opinion that while such broad attempts at correlation of microscopic evidences of malignancy and clinical course are of great value, the situation is so complicated that further attempts at analysis are justified. The duration of life compatible with intracranial tumor depends on at least three factors. The first is the rapidity of growth of the tumor, and this is probably in most cases in direct relation to the microscopic evidences of malignancy. This factor is important not only because of the simple time element concerned in growth, but also because the intracranial contents adjust themselves better to slow increase in pressure; hence slow growing tumors may exist for long periods of time or reach relatively great size before giving rise to acute symptoms. The second factor is the situation of the tumor, and this may be of the greatest importance; for example, a fibrous astrocytoma in the midbrain may, while still very small in size, produce death by blocking the aqueduct of Sylvius and producing internal hydrocephalus. Again tumors of the brain stem must soon result fatally because of the importance to life of the bulbar or diencephalic centers that become involved so early in these cases. On the other hand, tumors may reach great size before producing serious symptoms, especially if situated above the tentorium. If located in so-called "silent areas" the first warning of their presence may be the onset of signs of increased intracranial pressure, developing rather suddenly when the tumor has reached such a size that mechanical adjustments can no longer be made by the intracranial contents. Finally, the third factor is the treatment, which is given, viz., the type and the extent of surgical procedure and the amount of radiation that may be employed.

In the study of frontal lobe tumors previously referred to, the variable factor of treatment was eliminated by confining the study to the period from the appearance of the initial symptom or symptoms referable to an intracranial lesion to the time that the patient first came to the attention of the surgeon. Further, because these tumors were confined to the frontal lobe, the situation of the neoplasm was perhaps less important than it would be for tumors in any other part of the brain. Only rarely do tumors of the frontal lobe produce obstructive hydrocephalus (tumors in or near the midline may do so by occlusion of the foramen of Monroe, but this is rare) and moreover this portion of the brain contains a large area of "silent" cortex. Almost half (45%) of the patients with glioblastoma, and exactly 50% of all the gliomas had symptoms referable to an intracranial lesion for more than a year. Over 15% of all gliomas and 10% of the glioblastomas had symptoms for more than five years before coming to the attention of the surgeon.

The diagnosis of intracranial tumors has become increasingly important with the development of improved surgical procedures which offer improvement if not cure to these patients. In making a diagnosis of an organic intracranial lesion it is necessary to proceed in an orderly fashion, taking a thorough history, doing a complete general examination to distinguish coexisting disease, and then proceeding with a neurologic examination. Ophthalmoscopic examination will reveal the condition of the ocular fundi and determination of the visual fields will often reveal localizing defects. Roentgenographic examination of the skull may demonstrate localized erosions, increased convolutional markings, hyperostoses, deposits of calcium within neoplasms, or shifting of a calcified pineal gland. Spinal fluid

examinations are sometimes necessary to differentiate inflammatory or degenerative lesions, but usually give little information of positive value in intracranial tumor. If choked discs are present spinal puncture is usually contraindicated.

It must be emphasized that the diagnosis of intracranial tumor should be made, if possible, before signs of increased intracranial pressure appear. This does not occur until a tumor reaches such a size that the intracranial contents can no longer adjust themselves to the increase in pressure, or until it blocks the circulation of cerebrospinal fluid (as when in the cerebral aqueduct or the fourth ventricle) and produces an internal hydrocephalus. Too often this represents an advanced stage and the high intracranial pressure plus the size and extent of the tumor add greatly to the dangers of surgical intervention. Hence it behooves us to make an early diagnosis whenever possible. In order to do this it is necessary to keep the possibility of intracranial tumor in mind whenever confronted with symptoms of a cerebral lesion. We must remember what Bailey has well said, viz., that "there is only one cardinal sign of tumor of the nervous system—a nonfebrile, steadily increasing alteration of nervous function," and whenever this is seen, confirm or exclude the presence of a tumor.

At times it is necessary to resort to surgical measures in order to definitely diagnose or localize an intracranial tumor. Dandy has given the neurologic surgeon an invaluable aid in ventriculography. This procedure is not without danger, but when judiciously performed will usually solve the difficulties of localization which may be present. If exploration does not immediately follow the ventriculography, it will often be necessary after the roentgenograms are made to remove the air that was injected in order to prevent untoward symptoms. Often simple ventricular puncture or estimation is sufficient to localize the lesion. By tapping both ventricles, if one is found to be small. containing only a few cubic centimeters of fluid, not only is an infratentorial tumor eliminated, but the lesion is lateralized to the side of the small ventricle. If both ventricles are dilated, patency of the foramen of Monroe may be tested by injecting a dye, as methylene blue or indigocarmine, into one ventricle and attempting to recover it from the other. A communicating hydrocephalus speaks for an infratentorial lesion. In such cases injection of air should be proceeded with and the usual films made, as a filling defect of a lateral ventricle may reveal an unsuspected frontal or temporal lobe tumor.

The surgical exploration of the cerebral hemispheres is usually carried out through some type of osteoplastic flap arranged so as to preserve the blood supply and give the desired exposure without producing disfiguring scars. Usually the scalp, temporal muscle and bone are reflected together, although at times it is desirable to reflect the scalp flap separately, or to reflect the scalp and temporal muscle as a combined flap and carry out a decompression opening beneath. Tumors of the temporal lobe can sometimes be removed satisfactorily through such an opening. All suboccipital craniotomies are in reality suboccipital decompressions, since the bone rarely is elevated as a flap, but is removed with a rongeur and is not replaced during the closure. To make the sub-occipital decompression most effective, the occipital bone should be removed widely and the decompression should include the dorsal portion of the foramen magnum and the arch of the atlas.

The surgical procedures that may be carried out on gliomas depend on their location and degree of malignancy. Those situated in "silent areas," as the frontal, temporal or post-parietal regions of the cerebral hemisphere or the vermis or hemisphere of the cerebellum can be resected with adjacent brain tissue; that is, partial or complete lobectomy can be carried out. While some neurologic or psychic change always follows the loss of brain substance, yet such changes are minimal for the right frontal and temporal lobes or for cerebellar tissue and consequently tumors of these regions can be attacked more radically. Gliomas situated in the motor cortex or in the speech area of Broca must be treated more conservatively, with only subtotal resection from the central part of the tumor to avoid increasing motor disturbances already present or obviating the possibility of return of function in already totally hemiplegic patients. Removel of entire cerebral hemispheres has been performed in some cases by certain surgeons. Such extensive procedures are necessarily limited to a small group of patients. Tumors that require such extensive resection will usually have invaded the basal ganglia and thalamus, and unless these also are resected, removal

will be incomplete. I question whether we are justified in extending the life of a patient at the cost of partial or complete spastic hemiplegia for his remaining years.

The type of glioma exposed at operation has great bearing on the procedure to be followed. As soon as the tumor is exposed an immediate biopsy should be performed. At this point the aid of a pathologist experienced in the histopathology of gliomas is invaluable to the surgeon. Of course the latter should, as far as possible, learn to depend on the gross appearance of the neoplasm, but the diagnosis is difficult enough with all possible aids. The more benign types, as the astrocytomas and oligodendrogliomas, should be as widely removed as their situation permits. Astrocytomas are often cystic, and if the mural tumor on the wall of the cyst can be removed permanent cure will be effected. The rapidly growing and rapidly recurring oligodendroblastomas and medulloblastomas had best be treated with generous decompression to be followed by massive doses of roentgen therapy. Glioblastoma is the most frequent glioma in most of the reported series. Generally speaking, these tumors rapidly grow, rapidly recur, and respond poorly to roentgen therapy. However, they are a heterogeneous group both pathologically and clinically. When favorably situated, and of relatively small extent, radical resection should be carried out. In all cases the patient should have the benefit of large doses of roentgen therapy.

Decompressions at the base of the osteoplastic flap beneath the temporal muscle are worth while and offer additional relief in the case of partially removed and inoperable tumors. They also provide safety valves against the temporary edema that may follow the later administration of x-ray. At times patients whose condition does not permit an extensive surgical procedure may recover sufficiently after subtemporal decompression for a later attack upon the tumor.

Roentgen therapy has proved of the greatest value in the treatment of some gliomas, of considerable assistance in others, and has been very disappointing in still others. Davis and Weil, Deery, Frazier, et al., and others have carried out careful studies, with histologic controls before and after treatment, on the effect on roentgen rays on the gliomas. It is generally accepted that the most malignant, the medulloblastoma, is quite susceptible to x-rays and responds well temporarily. Unfortunately, recurrence is the rule. The more benign tumors, astrocytomas, oligodendrogliomas, etc., respond poorly and seldom show much change as the result of therapy. Ependymomas, according to Frazier, show some response. Glioblastomas in the main are not radiosensitive, although occasionally surprisingly good clinical results are obtained with roentgen therapy.

In view of this varied response it is my opinion that the x-ray treatment of gliomas should never be undertaken without previous surgical exploration with determination of the type and extent of the tumor in so far as possible. Then, depending on the findings, radical resection of the tumor may be carried out, with perhaps the administration of x-ray later as a prophylactic against recurrence. Or partial removel of the neoplasm may be done, and then this supplemented with decompression and energetic roentgen therapy. Finally, the indicated treatment may be simply a decompression to provide temporary relief, with massive doses of high voltage x-rays as the principal therapeutic agent.

The following case reports are illustrative of some of the above points:

Case 1: Oligodendroblastoma of left frontal lobe; admitted 11-21-34; operation, 11-22-34; dismissed 12-22-34.

N. E., a white male aged 37, had during the six months before admission to Mercy Hospital noticeable mental changes, consisting of loss of memory for recent events, depression and irritability. Headaches and failing vision had been present for three months, and during this period he had three or four attacks of momentary weakness and numbness of the right lower extremity.

Examination revealed a well-nourished white male whose responses were slow and who seemed dull and indifferent. He seemed to lack appreciation of his situation, was somewhat facetious and exhibited definite "Witzelsucht." There was a bilateral papilloedema of three diopters with hemorrhages and exudates. The preoperative diagnosis was left frontal lobe tumor.

A left frontoparietal osteoplastic craniotomy revealed a very vascular infiltrating tumor coming to the surface in the superior frontal convolution. A biopsy was made, and the pathologist reported the tissue to be from a "malignant glioma." A large subtemporal decompression was made and the wound closed. Later examination of the tumor tissue with special stains revealed it to be an oligodendroblastoma.

Convalescence was uneventful until the fifth postoperative day, when a complete right hemiplegia and a marked aphasia appeared. This was thought to be due to postoperative vascular changes in the left cerebrum. High voltage roentgen ray treatment was begun on 12-3-34. He received a total of 3,360 r units during the next 15 days, divided into 14 fractions. There was gradual neurologic improvement and at dismissal there was only moderate residual hemiparesis and aphasia. The papilloedema was subsiding.

By 2-9-35 the hemiplegia and aphasia had disappeared and the optic fundi appeared normal. The decompression bulged moderately. The patient returned to work as an automobile salesman in April, 1936, and worked until September, 1936, when there was a reappearance of right hemiparesis and partial aphasia. He was again given roentgen ray treatment, a total of 5,040 r units, divided into 20 fractions in October, 1936, and another series of 4,500 r units in 18 fractions in December, 1936.

From that time to the present he has remained well. When last seen (3-25-38), neurologic examination was negative except for slight hesitancy of speech and slight euphoria. The decompression was flatter than at any time since operation and very soft.

Case 2: Medulloblastoma of cerebellar vermis; admitted 1-4-38; operation, 1-5-38; dismissed 1-19-38.

J. D., a white boy aged eight, had three months before admission to Mercy Hospital a brief episode of headache and stiff neck and was suspected of having poliomyelitis. He quickly recovered from this and was well until three weeks before admission when diplopia suddenly appeared. At the same time he became ataxic and clumsy and began to have frontal headache. He had vomited on three occasions.

Examination revealed moderate ataxia with tendency to deviate to the right. The head was tilted to the right. The Romberg sign was positive bilaterally, and there was a positive Babinski response on the left. There was a "cracked pot" percussion note of the head and the optic fundi showed bilateral papilloedema of two to three diopters with hemorrhages and exudates. X-rays of the skull showed increase of the convolutional markings with slight separation of the sutures. The preoperative diagnosis was mid-line cerebellar tumor, probably medulloblastoma.

Operation consisted first of a preliminary ventricular estimation that revealed an internal communicating hydrocephalus. This was followed by a midline cerebellar exploration and decompression. A purplish gray, friable, vascular tumor presented itself at the lower end of the fourth ventricle. A biopsy of this was reported as medulloblastoma by the pathologist. The wound was then closed.

Convalescence was complicated by a convulsion the night after operation and by extreme restlessness for 48 hours. The wound healed by primary intention, and high voltage x-ray treatment was begun 12 days after operation.

He received x-ray treatment to the entire cerebrospinal axis as follows: 2500 r units to the cerebellum in ten fractions; 1500 r units to the cerebrum in six fractions; 850 r units to the cervical and thoracic spine in three fractions; 900 r units to lower thoracic and lumbar spine in three fractions; and 900 r units to the sacral region in three fractions; a total of 6650 r units in 25 fractions.

The child has steadily improved, and when last seen (4-27-38) the decompression was flat, the fundi were normal (vision 20/20 O.U.), and there were no objective neurologic findings. He was gaining weight and was in excellent physical condition.

Case 3: Glioblastoma of the right frontal lobe: admitted 1-16-36; operation 1-27-36; dismissed 2-20-36.

C. N., a white female aged 55, had severe frontal headache for five weeks before admission to the Cook County Hospital. For one week nausea and vomiting had been present, and she had been dull, drowsy and indifferent.

Examination revealed bilateral frontal percussion tenderness. There was moderate weakness of the left extremities and slight weakness of the lower part of the left side of the face. The left abdominal reflexes were absent; there was a Hoffman sign on the left, and reflex grasping could be elicited in the left hand. There was bilateral papilloedema of four diopters with numerous hemorrhages and exudates. The patient was disoriented for time, but not for place. She was dull and indifferent, with slow responses, and without insight into her situation. The preoperative diagnosis was right frontal lobe tumor.

A right frontal osteoplastic exploration revealed an extensive infiltrating subcortical tumor in the right frontal lobe. Material for biopsy was removed by aspiration through a cannula. The patient's condition did not permit any further surgical procedure. In order to close the wound it was necessary to remove the entire bone flap because of the extensive herniation of the brain. Later microscopic examination of the tissue removed showed it to be from a glioblastoma.

The patient rallied after operation and convalescence was uneventful. The left hemiparesis improved slowly, and at dismissal there was only slight weakness of the left side. High voltage roentgen treatment was begun before dismissal, and a total of 3920 r units was given, divided into 14 fractions.

The patient did well for five months, then there was a rapid recurrence of headache, vomiting and progressive paralysis of the left side. She was readmitted to the hospital and more roentgen treatment, a total of 1120 r units in four fractions, was given. She continued to fail and died 9-9-36. Permission for necropsy could not be obtained.

Case 4: Fibrillary astrocytoma of cerebellum: admitted 4-22-37; operation 5-10-37 and 5-24-37; dismissed 7-3-37.

L. H., a white female aged 15, had headache, vomiting and ataxia for six weeks before admission to the Cook County Hospital. Tinnitus was present in both

ears from the onset, and she lost eleven pounds weight during this period.

Examination revealed marked ataxia with a tendency to fall to the right or forward. The Romberg sign was positive. There was generalized muscular weakness with moderate hypotonia and incoordiation of all extremities. The Babinski sign was positive on the left and equivocal on the right. The optic fundi showed bilateral papilloedema of three diopters with some exudates, and there was bilateral weakness of the lateral recti. The patient was cooperative but drowsy and indifferent. The preoperative diagnosis was a mid-line cerebellar tumor.

Suboccipital exploration and decompression revealed a vascular infiltrating tumor of the cerebellar vermis. From the gross appearance it was thought to be a medulloblastoma and a biopsy was taken and the wound closed. Convalescence from this operation was uneventful. Microscopic examination of the tissue removed proved it to be from a fibrillary astrocytoma and accordingly further surgery was undertaken. Two weeks later the wound was reopened, and an extensive piece-meal resection of the tumor was performed, using the loop of the electrosurgical unit. The tumor occupied all but the most superior part of the vermis and extended laterally into the cerebellar hemispheres and into the dorsolateral wall of the fourth ventricle at the superior anterior part of the tumor. All of the tumor was removed grossly except the most superior and anterior part which was untouched because of its lateral extension into the medulla. At the close of the procedure the fourth ventricle was widely exposed, and the inferior end of the Sylvian aqueduct could be easily seen.

Convalescence was protracted and stormy. An irregular fever of 101° to 104° F. was present for two weeks. She was very listless and apathetic for three or four weeks. A cerebrospinal fluid fistula was present from the second to fourth weeks postoperatively. At dismissal the optic fundi showed no edema, but were pale with some loss of substance. There was slight weakness of the external recti and of the left facial muscles. She was moderately ataxic, alert and cooperative, but euphoric and facetious. A series of high voltage roentgen ray treatments was given after dismissal, a total of 5382 r units in 24 fractions.

When examined in October, 1937, vision was 20/30 O.U. There was slight generalized weakness and incoordination of the extremities, and the Romberg sign was positive. The general condition was excellent. When last seen (5-13-38), the Romberg sign was only slightly positive; the patient had returned to school and resumed normal activity, including dancing.

Case 5: Fibrillary astrocytoma right temporal lobe: admitted 9-12-35; operation 9-13-35; dismissed 11-7-35.

J. B., a white male, aged 33, had generalized convulsions for four and one-half years before admission to Mercy Hospital. He was also subject to frequent minor attacks of loss of consciousness. The major attacks were controlled fairly well with large doses of phenobarbital. Diurnal headaches had been present for one year. Encephalograms two months previously were considered as negative for tumor.

Examination revealed slight hyperactivity of the left tendon reflexes with positive left Hoffman and Rossolimo signs. The visual fields showed a partial left upper quadrant homonymous defect. The patient was somewhat dull and indifferent and seemed to lack appreciation of his situation. Roentgenograms of the skull revealed a slight shift to the left of a calcified pineal gland. The preoperative diagnosis was right temporal lobe tumor.

Right parietotemporal osteoplastic exploration revealed a firm fibrous subcortical infiltrating tumor 2 cm. beneath the surface of the superior temporal convolution. This was removed piece-meal with the electrosurgical loop. All the tumor was grossly removed, leaving a cavity approximately 3x3x5 cm. in the posterior part of the temporal lobe. The ventricle was not opened. Microscopic examination of the tissue removed showed it to be a fibrillary astrocytoma.

Convalescence was uneventful. High voltage roentgen therapy was given; a total of 5000 r units divided into 20 fractions. At dismissal the patient was in excellent health, and his only neurologic defect was an incomplete left upper quadrant homonymous visual field defect.

He has remained well to date (5-6-38). There have been no generalized seizures since operation. An occasional petit mal attack is his only complaint. Encephalography in October, 1937, showed slight enlargement and lateral displacement of the temporal horn of the right lateral ventricle. This was considered to be due to traction from the operative scar in the right temporal lobe.

Case 6: Astrocytoma of pons: admitted 7-28-37; encephalogram 8-6-37; died 8-18-37.

C. A., a white male aged 31, five months before admission to Mercy Hospital awoke with diplopia which was found to be due to a right internal strabismus. Two weeks later numbness of the left hand appeared. Progressive weakness of the left side of the body followed, and at admission the patient could hardly move the left upper extremity. Vomiting had occurred on a few occasions.

Examination revealed weakness and incoordination of the left extremities and the lower part of the left side of the face. The weakness was much more marked in the left upper extremity. The tendon reflexes were increased on the left, and the Hoffman and Babinski signs were positive on that side. The abdominal reflexes were absent bilaterally; the cremasteric reflex was present on the right but absent on the left. The right lateral rectus muscle was paralyzed. The optic fundi were normal, as were the visual fields. Roentgenograms of the skull and examination of the spinal fluid yielded no abnormal findings. One consultant made a diagnosis of neoplasm, another of encephalitis.

Encephalography was performed 8-6-37. The drainage was slow and tedious but without untoward incident. 105 cc. of fluid was removed and air substituted, using the fractional method. Roentgenograms made after this procedure showed slight enlargement of the ventricles with no distortion or displacement. The subarachnoid channels were well filled and appeared normal. There was less than the usual discomfort following the encephalogram.

There was slight improvement in both the diplopia and the left hemiparesis. Suddenly after eating lunch on 8-18-37 the patient had a generalized convulsion and stopped breathing. He received artificial respiration for eight hours but finally died.

Necropsy revealed a fibrous infiltrating tumor of the right side of the pons with a massive hemorrhage in the upper half of the pons on the right. This tumor proved on microscopic examination to be an astrocytoma.

SUMMARY

The condition of all patients with glioma of the brain is not hopeless. On the contrary, the results of surgical treatment of these tumors compare favorably with those obtained in "cancer" generally, and are much superior to the results in malignant tumors of other parenchymatous organs, as the liver, lungs, or kidney. Certain types in favorable locations can be completely removed, and long periods of relief of symptoms can be obtained in other cases by subtotal removal of the tumor. Again high voltage roentgen therapy is of great value in some of these neoplasms. Finally, the relief of symptoms afforded by decompression alone is often comparable to that given by such procedures as gastroenterostomy or colostomy in carcinoma of the stomach or colon.

The results are constantly improving and the mortality rate decreasing but, as in all malignant tumors, there is a crying need for earlier recognition and localization of the disease. The surgeon himself must be qualified to evaluate clinical findings and to carry out the meticulous surgical procedures required. Close cooperation between the surgeon and the radiologist is a necessity if the patient is to be given the benefit of the best available treatment.

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DISCUSSION

Dr. P. A. Nelson, Chicago: I want to congratulate Dr. Voris on his excellent paper. I wish to stress the necessity of referring cases of brain tumors to the neurosurgeon at the onset of the disease rather than after symptoms have persisted for months. I also believe that decompression should be done in order to obtain tissue for microscopic study. Decompression makes it very much less dangerous to irradiate these tumors if that is the treatment decided upon. Also it is important because tumors may be diagnosed incorrectly from the clinical findings alone. Many brain tumors require surgery alone, but others respond best to a combination of surgery and irradiation.

The first case presented by Dr. Voris was a man with a brain tumor who was operated upon. His irradiation was begun while he was still bed-ridden and unable to walk. In the first series he was given 3360 r units and 14 treatments. That was followed in October, 1936, by 20 fragmented treatments of 5040 r units. The treatment was repeated in December, 1936, in which 18 divided treatments were given of 4500 r units. This made a total of 12,900 r units with no appreciable damage to the skin or areas treated. I think irradiation can be carried to far greater limits than we have heretofore. We have been careful and tried to remain on the conservative side.

The second case Dr. Voris presented was a cerebellar medulloblastoma, and I think the important thing to emphasize is that after the diagnosis is made medulloblastomata are radiological problems. However, decompression is almost a necessity because it makes radiological treatment so much easier. The other fact that is important is that the entire spinal fluid conducting system must be treated. The patient was given 1500 r units and 2650 r units—a total of 6650 r units. This course was repeated in six weeks over the cerebellum, the cerebrum and the vertebral column. At the end of three months 1500 to 3000 r units were given over the tumor area or cerebellum.

The fifth case he presented was one in which not much could be expected from radiation. He suggested radiation because he believed that the tumor was not thoroughly removed, and for that reason radiation was instituted. The growth is at least under control for the time being.

POSTNATAL COMPLAINTS IN 1000 CONSECUTIVE CASES

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Postnatal complaints are many and varied. In general they may be divided into two groups, namely, 1. those due to parturition itself; 2. those not related to labor. These complaints were observed in 1000 consecutive cases excluding cesarean section. The symptoms were noted as the patient perceived them and recorded together with the physical findings. It was then seen that the symptoms and the objective findings could be arranged into subgroups. The results of this study are as follows:

There were 610 multiparae and 390 primiparae. Eight hundred and six or 80.6% had one or more complaints. The complaints due to labor may be divided into 1. those of the pelvic organs as after-pains, disturbances of the bladder, rectum, abnormal bleeding, pain over the symphysis and pain in the coccyx; 2. those of the breasts as pain, painful nipples, axillary swelling, galactorrhea; and 3. those from sutures.

After-pains were by far the most frequent and occurred in 447 multiparae or 773.3% of 610 cases and in 29 primiparae or 7.43% of 390 cases. The locations were in the lower abdomen, the small of the back, the inguinal regions and rarely the legs in that order of frequency. They varied in intensity and character from a few mild aches to severe cramps requiring analgesics. They were often more severe during nursing or would be present only at this time. Occasionally they were absent for the first 24 hours even though the infant did nurse. The number of labors in multiparae did not influence the duration of the pains, the longest being six days; in a para four. Some patients stated that they had had after-pains after some labors and not after others. Of the multiparae 98 had after-pains one day, 156 two days, 132 three days, 49 four days, 11 five days and one six days. Of the primiparae 15 had after-pains one day and 14 had after-pains two days. In 15 primiparae the lochia were profuse during the duration of the after-pains and in 14 they were moderate or normal. Only one of the primiparae having after-pains gave a history of previous abortion, ten gave a history of cramps during the menstrual period and four had gram negative intracellular diplococci.

Complications in the genito-urinary organs were: 1. Retention of urine. 2. Involuntary urination. 3. Frequent urination. 4. Pain after urination.

Retention of urine. Difficulty in urinating occurred in 39 patients, 31 primiparae and eight multiparae. Its cause is problematical. The difficulty was psychic in seven of the patients as they did not have the difficulty until the third or fourth day when another patient was put into the room (all rooms at the Lewis Memorial Maternity Hospital contain either two or three beds). In the other 32 the retention was probably due to trauma. The day of onset, number and duration in days were as follows:

Day of onset	1	2	3	4	5	6	7	8
Number	32	0	3	4				
Duration in days and Number	1 14	2 11	3 3	4 5	5 2	6 3	7 0	8 1

Involuntary urination occurred in four cases, two primiparae and two multiparae. In three patients it occurred on the first day and in one on the fifth day. The duration was one day in one patient, two days in another and five and six days in one case each. In the first two cases ischuria paradoxa was present, in the third case which lasted five days there probably was an injury to the sphincter as the condition followed a difficult forceps delivery. And in the fourth case, the condition lasted six days; upon interrogation it was found that she had involuntary urination for three months previous to delivery and also that she had a similar condition with a previous pregnancy.

Frequent urination was observed in three patients, two primiparae and one multipara. It occurred on the first, third and fourth days respectively. It lasted one day in two cases and four days in one case, the diagnosis in the latter being pyelitis. In the other two the diagnosis was urethritis and cystitis.

Pain after urination occurred in three cases, all primiparae. In two it was present on the first day and in one on the eighth day. In all three the cause was irritation of the episiotomy wound by urine. In the case occurring on the eighth day the pain was experienced upon removal of the sutures. The duration was one day in two cases and two days in the third.

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Bleeding. Hemorrhages to which the patients called our attention numbered four, two of which occurred in primiparae and two in multiparae. They occurred on the first, second, ninth and tenth days respectively. In one case the bleeding occurred on two successive days and in the other three on only one day. The diagnosis was atony of the uterus in all cases.

Pain over the symphyseal region occurred in four patients, two primiparae and two multiparae. In two patients the pain occurred on the second and third day each and in the other two on the fifth day. In the latter two it was due to distention of the bladder and relieved by catheterization. In the other two it was due to trauma to the symphysis in one case and lasted three days, while in the other case the pain seemed to be in the muscles attached to the symphysis and lasted two days.

Pain in the coccyx. Three primiparae had this complaint which was due to trauma during passage of the fetus. The pain was noticed on the second day in two cases and on the third day in one case. It lasted two days in the former and one day in the latter.

Pain in the rectum was present in 25 patients, 17 primiparae and eight multiparae. The diagnosis and numbers were: hemorrhoids 22; sutures two and hematoma in the episiotomy incision one. The days of onset, numbers and duration were:

Day of onset	1	2	3	4	5	6	7	8	9
Number	18	3	0	0	0	1	1	1	1
Duration in days and Number	1	2	3	4	5	6	7	8	9
	3	4	5	7	1	2	1	1	1

Pain in the breast occurred in 196 patients, namely, 76 primiparae or 22.31% in 390 cases and 109 multiparae or 17.87% in 610 cases. In 174 cases the diagnosis was engorgement, in 22 mastitis and in two breast abscess. The day of onset in either primiparae or multiparae and duration in days was as follows:

Day of onset	1	2	3	4	5	6	7	8	9
Primiparae	0	3	12	40	19	9	2	2	0
Multiparae	1	9	21	44	22	7	4	0	1
Duration in days and Number	1	2	3	4	5	6			
	105	45	22	14	9	1			

Therefore the onset of painful engorgement in either primiparae or multiparae occurred on the fourth day in the greatest number of cases, namely, in 45.97% of the former and in 0.37% of the latter and in the majority, namely, 105 or 53.57% it lasted one day.

Painful nipples. Eighty-seven patients, namely, 32 primiparae and 55 multiparae, complained of sore nipples. Blisters were found in 45 patients, erosions in 17, vertical cracks in 11, circular cracks in five and no demonstrable disease processes in nine cases. The day of onset and duration were as follows:

Day of onset	1	2	3	4	5	6	7	8	9	10
Number	4	10	18	20	15	9	7	3	1	0
Duration in days and Number	1	2	3	4	5	6	7	8	9	10
	19	29	12	9	8	5	2	1	1	1

Swelling in the Axilla. Although swollen axillary glands are common only seven patients had this complaint, namely, three primiparae and four multiparae. The day of onset was: four on the fourth day, two on the fifth and one on the sixth day. The discomfort lasted one day in three patients, two days in three patients and three days in one patient.

Galactorrhea. Although some milk is often lost between feedings, only one patient brought this to the doctor's attention. It occurred in a primipara on the fourth day and lasted one day.

Discomfort due to sutures was observed in 101 patients. The frequency may be assigned to the great number of episiotomies performed, namely, 327. Three patients had infected sutures; seven patients had edema. In the remainder of the cases the discomfort was caused by the irritation of the silk-worm gut. The day of onset and duration were as follows:

Day of onset	1	2	3	4	5	6	7	8
Number	77	8	2	2	5	6	1	0
Duration in days and Number	1	2	3	4	5	6	7	8
	18	13	20	15	11	5	6	13

The foregoing complaints were directly related to parturition. The complaints remotely or not at all connected with parturition will be considered according to their location and frequency.

1. HEAD AND NECK

Headache. Sixty-six patients, namely, thirty primiparae and thirty-six multiparae, complained of headache. The etiology was: constipation 17, mastitis 12, lochia retention six, salpingitis three, upper respiriatory infection three, hypertension and toxemia three, mastoiditis, sinusitis, cystitis, endometritis and eyestrain one each. In 17 patients no diagnosis was made. The day of onset and duration in days were as follows:

Day of onset	1	2	3	4	5	6	7	8	9	10
Number	5	6	15	14	8	5	5	4	3	1
Duration in days and Number	1	2	3	4	5	6				
	46	12	4	1	2	1	0	0	0	0

Coryza. Four primiparae and two multiparae complained of "colds." Three had the symptoms

on the first day, two on the second and one on the eighth. It lasted two days in four patients and four and five days in each of the other two.

Sore throat occurred in six patients, one each on the 2, 3, 6, 7, 9 and 10th days. In five the duration was one day and in the sixth it was present for five days. The latter had a septic sore throat.

Disturbance of vision. In spite of a large number of cases of hypertension with toxemia only one patient complained of spots before the eyes on the second day postpartum from this cause. Another patient had this symptom on the tenth day when getting up and out of bed. There was one case of amaurosis which persisted for eight days following delivery.

Toothache occurred in two patients, both multiparae. It was present on the third and sixth days in one case each and lasted one day in both cases.

Earache. Earache occurred in two cases, both multiparae. It was present on the third and fourth days in one case each and lasted one and four days in one case each.

2. CHEST ORGANS

Cough. Eight patients, namely, two primiparae and six multiparae, complained of cough. There were three on the first day, one on the second and third days, two on the fifth and one on the eighth days. Six patients had a cough one day, one had it for three days and one left the hospital with a cough. The latter had a pulmonary tuberculosis. Of the others. five had an upper respiratory infection and two a bronchitis.

Pain over the heart was present in five cases, three primiparae and two multiparae. The day of onset was: one on the first day, two on the second day and one each on the fifth and sixth days. It lasted one day in three patients and two days in two patients. Two of the patients had cardiac disease while in two others the pain was due to tympanites. In the fifth case no diagnosis was made.

Pain in the chest occurred in four patients, two primiparae and two multiparae, one each on the first, second, third and fourth days. It lasted one day in three cases, all of which had emboli, and two days in the other case in which no diagnosis was made.

Pleuritic pain occurred in two cases, one primipara and one multipara. It was present on the first day in one case and on the second day in the other. It lasted two days in the former and three days in the latter. The first patient had a bronchitis and in the second no pathology could be demonstrated clinically.

3. ABDOMEN

Constipation. Only ten patients had this complaint, although the number of patients not having a daily evacuation was much larger. Three patients complained of constipation on the first day, one on the second day and six on the fourth. The duration was one day in six cases, 3, 4, 5 and 6 days in one case each. In all cases except two the constipation was enforced because of sutures. In the two exceptions examination after cathartics failed to work revealed fecal impaction.

Gas pains. Five primiparae and seven multiparae had this complaint. Three each occurred on the first, second and third days, two on the fourth and one on the seventh days. The pain lasted one day in six cases, two days in three cases, three days in two case and four days in one case. The cause was constipation in five cases, the effects of ether in three cases and no diagnosis was made in four.

Pain in the side. Eight patients, two primiparae and six multiparae, had this complaint. The location of the pain was on the right side in all cases. The day of onset was: two on the first day, one each on the second and third days, two on the fifth day and one each on the sixth and seventh days. The duration was one day in five cases, two days in two cases and five days in one case. The latter was a cystitis. Four patients had a uterus sensitive to touch. In two cases no diagnosis was made while in one case the diagnosis was after-pains.

Nausea. Three primiparae and one multipara complained of nausea. It occurred on the first day in two cases, and the fifth and eighth days in the other two. It lasted one day in three cases and three days in one case. Ether was responsible in two cases, a temperature in another case while no diagnosis was made in the fourth case. The latter was probably of psychic origin as it occurred on seeing the condition of the patient in the adjoining bed.

Heartburn. In spite of the large number of women who complained of heartburn during pregnancy this symptom was present in only three cases postpartum. Two had it the first day and one the second day. It lasted one, three and six days in one case each. Only one of the

cases had this symptom previous to delivery while in the other two it developed for the first time during the puerperium.

Pain in the epigastrium. This symptom occurred in three cases, two primiparae and one multipara. It was present on the fifth day in two cases and on the eighth day in the other case. In one patient it was due to gas, in another to a retroverted uterus, while no diagnosis was made in the third.

Diarrhea occurred in two cases, both multiparae, one on the third and the other on the sixth day. It lasted two days in both cases. One stated that she had this symptom with her last baby and in the other the cause was due to an error in diet.

Belching and pain after eating occurred in two cases. In one the disturbance was probably caused by ether and lasted one day. In the other the pain occurred on the third day and lasted one day. No diagnosis was made.

4. EXTREMITIES

Pain in the legs. Twenty patients, five primiparae and fifteen multiparae complained of pain in the legs. The day of onset and duration in days were as follows:

Day of Onset.....	1	2	3	4	5	6	7	8	9	10				
Number 10	2	1	1	0	1	1	0	2	2					
Duration in days....	1	2	3	4	5	6	7	8	9	10	16	20	30	
and														
Number 13	2	0	2	0	0	0	0	0	0	1	1	1		

The diagnosis and frequency were: thrombophlebitis four; painful varicositic four; muscle soreness from posture during delivery six; pyelitis three; cramps one, while in two cases no diagnosis was made. The cases in which the duration of the pain was 16, 20 and 30 days were due to thrombophlebitis.

Pain from hypodermic injections was present in four cases. It was located in the arms and legs in two cases each. In three patients the pain was present on the first day and in one patient on the third day. The latter developed an infection. The pain lasted one day in two cases and three days in the other two.

Pain in the shoulder was present in three cases, one primipara and two multiparae. It occurred the first day in two cases and the third day in one case. It lasted one day in one patient and three days in the other two. Two patients had pain from muscular exertion and the third was suffering an accidental ether burn.

Pain in the hip occurred in two primiparae and in one multipara. It was present on the first, second and third days in one case each and lasted one day in one case and two days in two cases. In two cases a positive diagnosis was not established but was probably due to posture during delivery. The other patient stated that she had the pain during the last months of pregnancy.

Soreness in the biceps occurred in only one patient and was present the first three days postpartum. One patient complained that she had *muscular twichings in the legs.* It occurred on the fourth day and lasted two days. Another patient had a *boil on the arm* the first day postpartum; the pain lasted two days.

5. SKIN

Itching occurred in five cases, one primipara and four multiparae. It was present on the arm in one case, the feet in another, both arms and both legs in two cases and in the fifth it was on the vulva and due to a discharge. The onset was on the first, second, fifth, sixth and tenth days in one case each. It lasted one day in four cases and two days in the fifth. All cases with the exception of the one on the vulva occurred in the summer time and were due to heat rashes.

Excessive perspiration was present in two primiparae and in two multiparae. It occurred on the first and third days in two cases each. In three cases it lasted one day and in one case three days. It was physiological in all cases.

Herpes occurred in two primiparae and in two multiparae. The day of onset was one each on the second, fourth, sixth and seventh days. It caused no discomfort after the first day in three cases and after the second in another case. Two of the patients had an upper respiratory infection; in the others a pyelitis was found in one case and a retention of urine in the other.

6. GENERAL

Backache occurred in 27 patients, namely, 11 primiparae and 16 multiparae. The diagnosis and number were: muscular soreness seven, pyelitis five, after-pains five, salpingitis four, upper respiratory infection one, embolus one and no diagnosis was made in four. The day of onset and duration were as follows:

Day of onset....	1	2	3	4	5	6	7	8	9	10	13
Number 11	3	1	3	1	0	3	1	3	1		
Duration in days	1	2	3	4	5	6	7	8	9	10	13
and											
Number 11	5	4	3	2	0	1	0	0	0	1	

The patient in whom the backache was present for thirteen days had a pyelitis.

Numbness occurred in eight cases, three primiparae and five multiparae. It was present on

the first day in five cases, on the second day in two cases and on the eighth day in one case. The duration was one day in five cases, two days in another case and five and six days in one case each. The location and number were: in the finger tips in two cases and in the leg and thigh, forearm, feet, breasts and calves, one case each.

Dizziness was present in six patients, one primipara and five multiparae. It occurred on the first day in two cases, the fourth day in two cases and on the seventh and eighth days in one case each. It lasted one day in five cases and two days in one case. The diagnosis and frequency were: constipation two, toxemia one, eclampsia one, quinine one and no diagnosis one.

Stiffness occurred in five patients, three primiparae and two multiparae. It was present on the first day in three cases and on the second and fourth days in one case each. It lasted one day in four cases and three days in one case. The location and number were: legs three, right hip one and general one.

Insomnia occurred in five patients, all primiparae. It was present on the first and second days in two cases each and on the sixth day in one case. It lasted one day in four cases and two days in one case. In one patient the cause was a pain in the leg. Another stated that she had a stiffness in the right hip while in the other three no cause could be found.

SUMMARY AND CONCLUSIONS

From the foregoing enumeration and discussion of complaints, it is evident that those due to labor are very frequent and numbered 953 while those not due to labor numbered 232. After-pains, complications in the breast and discomfort due to sutures were the most frequent. Moreover 50% of the primiparae with after-pains had a profuse lochia evidently due to a decrease in contractility of the uterine muscle as ecbolic medication invariably controlled the excessive lochia. A drachm of ergot or an ampule of pituitrin may sometimes give relief from after-pains. According to De Lee over one-half the nursing mothers have sore nipples during the first few weeks postpartum. In this series the number was 8.7%. The frequqency of sore nipples in blonds and red-haired women was not greater than in brunnettes. though it is usually stated that the former suffer more frequently. Strenuous efforts on the part of the infant to obtain nourishment in a poorly secreting breast was the probable etiology of almost all sore nipples. Of several methods of treatment tried it was found that taking the infant off the breast for 12 to 24 hours was the best. The pain was no longer present even though a scab was still there. If necessary the breast may be pumped in the meantime. Discomfort due to sutures was easily alleviated by covering with adhesive the knot into which the sutures were tied. This is done always immediately after repair but the adhesive is often loosened by the lochia and the postpartum perineal irrigations. Hemorrhoids may become very annoying and cause the puerpera a good deal of distress. We have found that replacement and an ephedrine ointment gave the quickest relief. Retention and ischuria paradoxa were treated by catheterization at twelve hour intervals. Patients with residual urine were catheterized after every urination until the amount obtained was 30 cc. or less.

DISCUSSION

Dr. Otto H. Crist, Danville: Dr. Simunich's paper shows a world of work and a world of detailed statistical information. Much of the content is of such minor significance and so little importance that it hardly seems worth the effort. Many of the complaints are from conditions which are considered normal. I wish to commend the Doctor, however, on his willingness to devote so much time and energy on these minor details. Since this paper gives nothing on etiology or treatment it leaves little room for discussion. I will comment on a few of the Doctor's findings.

First, in the matter of bleeding. One cannot help but be struck by the small number of cases of hemorrhage—four, and none of these severe enough to require radical treatment. This is commendable and speaks for good conduct of labor, especially the third stage.

Second, painful sutures. There is a bunch of fine gentlemen in the north end of the state who seem to think they must use non-absorbable sutures in all perineal repairs. Now the sooner they learn that non-absorbable sutures are not necessary in normal clean cases the sooner they will have painless sutures. I am not speaking of the infected or potentially infected, or the badly macerated case, but the normal clean episiotomy will heal just as readily and far less painfully and with less scar when closed with subcutaneous plain catgut. This statement has been proved over years of time and with hundreds of cases. I again wish to compliment the Doctor on his episiotomies, 327 on 390 primiparas.

Third, painful nipples. The Doctor's cases must have had good prenatal care, for in my opinion this is the time to treat painful nipples. Nipples should be prepared for nursing weeks before labor by thorough removal of the scaly skin condition with either a brush or rough cloth and soap and water. Repeat this daily or every few days and follow with the application of

any oil until it can be done painlessly. If this procedure is continued until labor there should be but few painful or cracked nipples. The cracked nipple is one of the most annoying complications of the puerperium. In my experience its treatment is unsatisfactory. My success in the treatment of large, deep, circular cracks has not been equal to that outlined in Dr. Simunich's paper. I believe that this condition in the severe cases is sufficient reason for discontinuing nursing the breast and putting the babe on artificial feeding if the other breast is not sufficient. As time goes by, and more and more women are not able to nurse their babies, we are taking the baby away from the breast more readily than in former years. There is such a likelihood of forming an abscess from this condition that we are afraid to carry it for any length of time. This leads us to abscess of the breast.

Abscess of the breast is a formidable condition. The Doctor is to be complimented on having had only two. I think infected breasts are often neglected. I have seen a whole breast destroyed by waiting for definite fluctuation. A breast should be put to rest on suspicion of infection. It should be opened at the first sign of localization. These signs are localized pain and tenderness, slight redness and edema. When opened early the breast is saved.

One more point and I shall have finished. Phlebitis—again prophylaxis is a great factor in thrombophlebitis. Given a woman with large varicosities of the legs and vulva, and we suspect involvement of the broad ligaments. That woman should have repeated daily exercises of the body and limbs. Such exercises keep the blood moving and the veins more or less empty. This fact was brought out by Polak years ago and is now common practice. One question I would like to raise and that is when to start exercises in a case of phlebitis.

The Doctor is to be congratulated again on having only four cases of phlebitis. It is interesting and gratifying to note that no mention was made of complaints associated with infections of the pelvis.

There are many things in this tabulation that bespeaks good obstetrics, the most outstanding of which is the few major troubles.

Dr. George de Tarnowsky, Chicago: Dr. Simunich is to be congratulated on the immense amount of work he has done to review 1,000 cases and tabulate all the minor incidences and discomforts. It meant an enormous amount of work. I hope he will continue his interest and give us some more data on prophylaxis.

In regard to Dr. Crist's statement, I want to assure him that in the little village north of Springfield the number of surgeons who are using non-absorbable sutures is decreasing. At the Ravenswood Hospital where I work only two or three of the occasional obstetricians are using silkworm-gut. We are using catgut.

The paper is important but I do not think it is finished. When we can have some prophylaxis and the etiology intensified I think the paper will be of help.

Dr. V. D. Lespinasse, Chicago: In the Doctor's tabulation there seems to be a minimum number of complaints in regard to the urinary tract. When a woman is pregnant the kidneys and urinary tract are subject to extra strain and they should be looked after both before and after labor. One of the interesting cases in my experience was a woman who developed pain in her side about the fourth month of pregnancy, and pus in the urine. When we came to work up the case we found that the pain in the side was due to a definite kink in the ureter. The pain was mechanical. The pus in the urine came from the other kidney and was symptomless, which was rather an unusual finding.

The determination of bladder complaints and the examination of the bladder in pregnant women is a quite different technical procedure than in the non-pregnant woman. The shape of the bladder changes in pregnancy somewhat as mentioned in Dr. Reis' paper about fibroids. The bladder is low down in the early days of pregnancy and as the pregnancy progesses the fibroid goes up, and the same thing happens to the bladder as it goes up. The bladder is well off from the uterus but in pregnancy it spreads up into an elliptical shape and into a curve. Those of you who do cystography for the diagnosis of placenta previa probably appreciate that. The ureters are pushed to the side and then the orifices are farther away from the median line and they are farther up. When we try to look for the ureters in their usual location we will find they are not there. They are higher up and farther towards the lateral wall. The further advanced the pregnancy is, the more difficult it becomes from a technical standpoint to catheterize the ureters and cystoscope the bladder because the bladder is no longer elliptical, but crescent shaped.

Dr. Herbert E. Schmitz, Chicago: I think this is an opportune time to call your attention to what the radiologists are doing with infections. They have shown that x-ray is valuable in furunculosis, surgical parotitis, carbuncles, erysipelas and postoperative infections. I see no reason why it should not be used in breast abscess. In furunculosis it usually breaks down the infection very rapidly, relieves pain and often aborts the entire condition. I think we should use it in breast abscess.

Dr. William Simunich, Chicago (closing): I wish to thank Dr. Crist for discussing the paper. About the sutures, this was done quite some time ago. Most of these episiotomies were done by interns. We try to have them use a uniform technic and that is the reason we used interrupted silkworm-gut sutures.

Dr. deTarnowsky asked about etiology. I would just like to show one slide to illustrate the etiology of cracked nipples. I made the statement that most of them were due to the fact that the women did not have enough milk in the breasts. In the great majority of those patients complaining of painful nipples the date of onset was before the women had enough milk in the breasts, and therefore the statement that almost all cracked nipples are due to the fact that the baby does not get enough to eat. That is just one thing I would like to contribute to the etiology.

About bladder symptoms, there were only 39 patients who complained of retention of urine. We did not have much difficulty with urinary complaints.

Society Proceedings

CHICAGO MEDICAL SOCIETY

Wednesday, November 2, 1938

Program—"Surgery of High Blood Pressure."

"The Physiological Aspects of the Surgery of High Blood Pressure"—A. C. Ivy, Professor of Physiology, Northwestern University Medical School.

"The Surgical Treatment of High Blood Pressure—Its Value and Limitations"—Max M. Peet, University of Michigan, Ann Arbor, Michigan.

Discussion—Geza de Takats, Loyal Davis, Wilber E. Post, Robert W. Keeton, A. J. Carlson, James H. Hutton, R. W. McNealy, Adrian Verbrugghen, Julius M. Rogoff (by invitation).

Wednesday, November 16, 1938

Program—Symposium on Industrial Dermatoses.

The Objectives of the New American Medical Association Council on Industrial Health as Pertaining to Industrial Skin Diseases—Earl D. Osborne, Buffalo, N. Y.

A Consideration of Occupational Dermatoses Under the Illinois Workmen's Occupational Diseases Act of 1936—Harry R. Foerster, Milwaukee, Wis.

(a) Incidence and Treatment of Industrial Dermatoses (inclusive of prophylaxis).

(b) Technique and Interpretation of Patch-testing—Clark W. Finnerud.

Discussion—Wm. Allen Pusey, James H. Mitchell, Erwin P. Zeisler, Edward A. Oliver, Frances E. Senear, Carl M. Peterson.

Marriages

Paul L. Bergstrom, Kirkland, Ill., to Miss Lyne Gruhn of Columbus, Wis., September 4.

Paul Hardin Harmon to Miss Mary Logan Coleman, both of Springfield, Ill., September 13.

Edward A. Kuehn, Vandalia, Ill., to Miss Marguerite Robbie of Cedar Rapids, Iowa, August 8.

Alfred M. Paisley, Jacksonville, Ill., to Miss Elizabeth Winger of Keokuk, Iowa, September 3.

Personals

Dr. Archibald L. Hoyne addressed the West Side Branch of the Chicago Medical Society November 17 on "Management of Scarlet Fever."

At a meeting of the Tri-County Medical Society in Galesburg, October 25, Dr. Warren H. Cole, Chicago, spoke on hyperthyroidism.

The Stephenson County Medical Society was addressed October 27 by Drs. Joseph K. Calvin and Abraham F. Lash, Chicago, on nephritis and puerperal sepsis, respectively.

A new district health department has been established in Woodstock to serve the counties of Boone, Lake, McHenry and Winnebago. Dr. John F. Shronts is the district health officer.

Dr. Paul H. Harmon, Chicago, addressed the Woodford County Medical Society, September 19, on "Diagnosis and Treatment of Suppurative Arthritis of the Hip with Special Reference to Pathologic Dislocation."

The Chicago Tuberculosis Society was addressed October 20 by Drs. Paul H. Holinger on "Bronchial Obstruction Produced by Cardiovascular Disease" and Willard Van Hazel, "Problems in Chest Surgery."

The Sangamon County Medical Society was addressed in Springfield, October 6, among others, by Drs. Emmet F. Pearson and Darrell H. Trumpe on "Anatomy and Physiology of Chronic Bronchitis and Bronchial Asthma" and "Diagnosis and Management of Minimal Pulmonary Tuberculosis" respectively.

Dr. Maurice Gore, Aurora, has been appointed medical officer in charge of the new health district embracing the counties of DeKalb, Grundy, Kane, Kendall and LaSalle. A new unit including Bond, Clinton, Madison and St. Clair counties has been placed under the direction of Dr. Claude Milton Eberhart, Highland.

Dr. E. L. Cornell addressed the Stephenson County Medical Society, November 3 on "Repair of Obstetric Injuries."

Dr. B. C. Corbus, Nathan S. Davis III and A. A. Goldsmith presented papers at the Southern Illinois Medical Association, East St. Louis, November 3.

Dr. J. P. Greenhill addressed Will-Grundy County Medical Society, November 2, on "Diagnosis and Treatment of Obstetric Hemorrhages."

Dr. Samuel J. Fogelson addressed the Fulton County Medical Society, November 1, on "Treatment of Gastro-Duodenal Ulceration."

Dr. Herbert Rattner addressed a meeting at the St. Catherine Hospital, Indiana Harbor, Indiana, October 25, on "A Practical Consideration of the Commoner Skin Diseases."

Dr. Philip H. Smith gave a talk on "Management of Placenta Previa" before the McHenry County Medical Society, October 27.

Drs. Benjamin M. Levin and Henry Buxbaum presented the scientific program at the November 11 meeting of the Jersey and Greene County medical societies. Their subjects were "Infant Feeding" and Prolonged Labor."

Dr. Harry M. Hedge gave an address on "Treatment of Syphilis" before the Kankakee County Medical Society, November 10.

Dr. Leon Unger addressed the Medical Society of Jamestown, New York, October 27, on the subject of "Allergy in General Practice."

Dr. Irving F. Stein gave a talk on "Forceps Delivery" before the Lake County Medical Society, November 7, and before the Stephenson County Medical Society, Nov. 10.

Dr. William R. Cubbins gave an address on "Management of Fractures of Long Bones" before the Bureau County Medical Society, November 8.

Dr. Frederick B. Balmer addressed the Law Forum of Northwestern University Law School, November 17. His subject was "The Doctor on the Witness Stand."

Dr. William S. Sadler discussed "Psychiatric Aspects of Medical Practice" before the Postgraduate Conference of the Wayne County Medical Society at Detroit, November 9. In the evening he gave an address at Grand Rapids to the Michigan Public Health Association on "Mental Hygiene."

Dr. S. M. Feinberg was guest speaker at the November 17 meeting of the Oklahoma Allergists held in connection with the Southern Medical Association. His subject was "Clinical Aspects of Mold Allergy."

Dr. Louis W. Sauer addressed the Lake County Medical Society at St. Therese's Hospital, Waukegan, November 14. He gave a talk on "Care of the New Born" before the Stephenson County Medical Society on November 17.

Dr. Rollin Turner Woodyatt gave a paper on "Diabetes" before the DeWitt County Medical Society, November 14, at Clinton, Illinois.

Dr. E. L. Compere addressed the Will-Grundy County Medical Society at Joliet, November 16.

Dr. Fred M. Drennan addressed the Coles-Cumberland County Medical Society at Mattoon, November 16, subject, "Diseases of the Stomach."

Dr. A. F. Lash talked on "Recent Advances in the Management of Puerperal Sepsis" and Dr. M. P. Borovsky on "Infant Feeding" before the Knox-Warren County Medical Societies, November 17.

Dr. Julius L. Spivack addressed the Springfield Academy of Medicine, Springfield, Massachusetts, November 8. His subjects were "Tubovalvular Gastrostomy" and "The Surgical Management of Peptic Gastric and Duodenal Ulcer."

Dr. Seymour Fisher, formerly on the staff of St. Vincent's, Cook County, and Mt. Sinai of Chicago, has accepted the position of pediatrician at the Illinois Soldiers and Sailors Children's School at Normal, Ill.

News Notes

—Have you seen the exhibit in the Marshall Field & Co. Annex prepared by the Educational Committee for the Chicago Medical Society? The material was furnished through the courtesy of the University of Illinois College of Medicine, Mr. Tom Jones Department, and Doctor Paul H. Holinger.

—Dr. Paul C. Barton, since 1934 a member of the staff of the Council on Pharmacy and Chemistry, has been appointed director of the Bureau of Investigation of the American Medical Association. Following graduation from the University of Maryland School of Medicine, Baltimore, and completion of his internship, Dr. Barton spent several years in private practice.

—According to the *Health Messenger,* a young woman in the village of Westville died September 17 from what the attending physician described as a typical attack of rabies. About four months previously the woman was scratched on the leg by a puppy that is believed to have been rabid at the time. Since the death of the woman, seven relatives who believed they had been exposed to rabies by the patient or the dog have taken the Pasteur treatment.

—The third annual meeting of the Physicians' Association, state department of public welfare, was held in the rooms of the Kankakee County Medical Society, Kankakee, October 12. Dr. Abraham A. Low, assistant state alienist, discussed the newly organized association of former patients of the Psychiatric Institute of the Research and Educational Hospitals, University of Illinois, Chicago, and its implications for the entire group of mental patients, and Dr. Louis Belinson, Elgin, a comparative survey of antisyphilitic treatment in the state hospitals.

—Dr. Ludvig Hektoen executive director of the National Advisory Cancer Council, Washington, D. C., and director of the John McCormick Institute for Infectious Diseases, Chicago, delivered the fifteenth Pasteur Lecture at a public meeting in the auditorium of the Museum of Science and Industry, Jackson Park, November 22, under the auspices of the Institute of Medicine of Chicago and the Cancer Research Institute of the Chicago Woman's Club. The subject was "Progress in the Knowledge and Control of Cancer." The first Pasteur Lecture was given in 1920 and subsequently each year until 1931. Resumed in 1935, the lectures have been given annually since then. They are designed for laymen.

Deaths

Edward Everett Barbour, Peoria, Ill.; Physio-Medical College of Indiana, Indianapolis, 1899; member of the Illinois State Medical Society; aged 69; died, September 22, of lobar pneumonia and Parkinson's disease.

Harry Parke Beatty, Chicago; University of Wisconsin Medical School, Madison, 1930; aged 33; died, September 4, of injuries received in an automobile accident.

William Emmett Bueihler, Chicago; College of Medicine and Surgery, Chicago, 1904; Hering Medical College, Chicago, 1906; a Fellow, A. M. A.; president emeritus and on the consulting staff of the Illinois Masonic Hospital; diagnostician on the staff of the American Hospital; aged 69; died, September 19, of coronary disease.

William J. C. Casely, Marengo, Ill.; Chicago Medical College, 1885; aged 76; died, August 2, of atrophic cirrhosis of the liver.

True Deloss Coe, Keithsburg, Ill.; Rush Medical College, Chicago, 1884; a Fellow, A. M. A.; past president of the Mercer County Medical Society; aged 78; died, September 7, in a hospital at Monmouth of pneumonia.

Alfred Careno Croftan, Chicago; Hahnemann Medical College and Hospital, Chicago, 1896; a Fellow, A. M. A.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; at one time on the staff of St. Mary of Nazareth Hospital; aged 67; died, August 22, in Pasadena, Calif., of carcinoma of the colon.

Clarence A. Earle, Des Plaines, Ill.; College of Physicians and Surgeons of Chicago, 1887; a Fellow, A. M. A.; member of the American Academy of Pediatrics; for many years attending physician to St. Mary's Training School; on the staff of the Northwestern Hospital; aged 76; died, October 28, in St. Luke's Hospital, Chicago, of coronary thrombosis.

Oliver Perry Erwin, Medora, Ill.; Missouri Medical College, St. Louis, 1887; at one time mayor; aged 75; died, September 5, of cystitis.

William J. Harrell, Elkville, Ill.; Memphis (Tenn.) Hospital Medical College, 1883; past president of the high school board of education; aged 78; died, August 21, of cerebral hemorrhage.

Edward Marquette Harrington, Chicago; Northwestern University Medical School, Chicago, 1924; member of the Illinois State Medical Society; aged 40; died, August 22, in Peoria, of coronary occlusion.

George Archibald Hutchinson, Capron, Ill.; Northwestern University Medical School, Chicago, 1909; aged 53; died, August 4, of injuries received in a fall.

Robert H. Jacobs, Joppa, Ill.; Kentucky School of Medicine, 1894; served during the World War; died, September 9, of paralysis agitans.

Finley P. Johnson, Hoopeston, Ill.; Rush Medical College, Chicago, 1885; aged 82; died, August 8, in the Lake View Hospital, Danville, of bronchopneumonia.

Victor Josephson, Chicago; College of Physicians and Surgeons of Chicago, 1894; a Fellow, A. M. A.; aged 70; died, September 11, of coronary thrombosis and arteriosclerotic heart disease.

Thomas Bassett Keyes, Lake Bluff, Ill.; Albany (N. Y.) Medical College, 1895; a Fellow, A. M. A.; aged 62; died, October 2, of myocarditis.

Morris Leon Loevenson, Chicago; College of Physicians and Surgeons, Baltimore, 1893; aged 76; died, September 27, of carcinoma of the stomach.

Francis W. McNamara, Chicago; Chicago Medical College, 1889; for many years county jail physician; aged 71; died, September 16, in the Presbyterian Hospital of cerebral hemorrhage.

Golder Lewis McWhorter, Chicago; Rush Medical College, Chicago, 1913; a Fellow, A. M. A.; associate clinical professor of surgery at his alma mater; member of the Western Surgical Association; fellow of the American College of Surgeons; served during the World War; on the staffs of the Presbyterian Hospital, Oak Forest Infirmary and Cook County Hospital; author of numerous surgical papers, especially on the gallbladder and gastrointestinal tract; aged 50; died, October 16, of retroperitoneal sarcoma and uremia.

William E. Pittman, Roseville, Ill.; Rush Medical College, Chicago, 1885; member of the Illinois State Medical Society; aged 79; died, August 8.

James Eugene Pritchard, Aurora, Ill.; Washington University School of Medicine, St. Louis, 1908; member of the Illinois State Medical Society; aged 52; died, August 6, of amyotrophic lateral sclerosis.

David Nicholas Schaffer, Evanston, Ill.; Loyola University School of Medicine, Chicago, 1916; aged 52; died, August 24, in the Westlake Hospital, Melrose Park, of adenocarcinoma of the rectum.

Carl Schurtz, Streator, Ill.; Marion-Sims College of Medicine, St. Louis, 1900; member of the Illinois State Medical Society; aged 62; died, August 13, in St. Mary's Hospital following a gallbladder operation.

Albert Morton Shaw, Nauvoo, Ill.; Medical College of Ohio, Cincinnati, 1890; a Fellow, A. M. A.; formerly secretary of the Hancock County Medical Society; aged 73; died, September 13, in Burlington, Iowa, of pyelonephritis.

Joseph Shinglman, Cicero, Ill.; Illinois Medical College, Chicago, 1909; a Fellow, A. M. A.; formerly city health officer; aged 58; died, August 7, of angina pectoris.

Charles Delbert Snively, Ipava, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1897; served during the World War; member of the Illinois State Medical Society; secretary of the Fulton County Medical Society; aged 63; died, August 2, of heart disease.

Thomas M. Stapleton, Chicago Heights, Ill.; Chicago College of Medicine and Surgery, 1914; a Fellow, A. M. A.; aged 53; died, August 9.

Albert T. Washburn, Taylorville, Ill.; Chicago Homeopathic Medical College, 1891; aged 67; died, August 5, in Edinburgh of heart disease.

Adolphus George Wippern, Chicago; Missouri Medical College, St. Louis, 1890; College of Physicians and Surgeons, Medical Department of Columbia College, New York, 1892; member of the Illinois State Medical Society; formerly on the staff of St. Elizabeth's Hospital; aged 70; died, August 15, of arteriosclerosis, nephritis and diabetes mellitus.

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Book Reviews

SYNOPSIS OF CLINICAL LABORATORY METHODS. By W. E. BRAY, M. D. Fifty-one test illustrations, seventeen color plates. Second edition. St. Louis. The C. V. Mosby Company. 1938. Price $4.50.

Many new advances have been made in clinical laboratory methods within the last two years. New methods have been introduced and older procedures have been standardized. Directions are brief, but adequate, if directions are followed. Unimportant details have been admitted again, since it is assumed that beginners will have supervisory instructions and that the more experienced will not need such details. Much additional data has been added in this addition and the work is brought up to date in every respect.

SPINAL ANESTHESIA. By Louis H. Maxson, M. D. With 69 illustrations. Philadelphia, London, New York, Montreal. J. B. Lippincott Company. 1938. Price $6.50.

The place of spinal anesthesia in the surgical armamentarium, while not fixed, is becoming constantly more firmly established. Since its inception nearly forty years ago, much has been learned about it. Probably no other form of anesthesia has enlisted more enthusiastic support on the one hand or been the subject of more violent denunciation on the other. Only in the past few years has the impersonal viewpoint been attained. This work reviews the subject in detail, quotes many of the leading surgeons and as a final anlysis given us the latest authentic information on spinal anesthesia.

THE FORM AND FUNCTIONS OF THE CENTRAL NERVOUS SYSTEM. By Frederick Telney, M.D., and Henry Alsop Riley, M. D. Third edition. 600 illustrations. New York. Paul B. Hoeber, Inc. 1938. Price $10.00.

This third edition of this introduction to the study of nervous diseases, finished shortly before Dr. Tilney's death, was rewritten with a view to condensing the material somewhat and simplifying the presentation of such complicated subjects as the description of the cerebellum and its subdivisions. All recent advances in our knowledge of the functions and structure of the central nervous system have been included.

MEDICINE IN THE OUTPATIENT DEPARTMENT. By Winthrop Wetherbee, Jr., M. D. New York, London. Paul B. Hoeber, Inc. 1938. Price $1.00.

The need for sound guidance through the labyrinth of difficulty faced by the student in his outpatient work makes it essential that this convenient outline of axioms and basic principles be available at all times for reading. The value of this contribution is in clear, brief, and fundamental statements with which every medical student should not only be familiar, but which he should never neglect to utilize.

TELL ME THE TRUTH DOCTOR. By Irwin I. Lubowe, M. D. Philadelphia. Dorrance & Company. 1938. Price $1.50.

This work is a frank, revealing an educational discussion of venereal diseases and sex hygiene, conducted in the privacy of the physician's consulting room.

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INTERNS HANDBOOK BY MEMBERS OF THE FACULTY OF THE COLLEGE OF MEDICINE, SYRACUSE UNIVERSITY, UNDER THE DIRETION OF M. S. DOOLEY, M. D. Second Edition revised and reset. Philadelphia, London, Montreal. J. B. Lippincott Company. 1938.

Price $3.00.

This work is intended as a guide, especially in emergencies, for the interne and physician in general practice. The authors have met the problem of how to equip the interne with information for meeting emergencies without either writing a text-book or unwittingly making him a compend addict.



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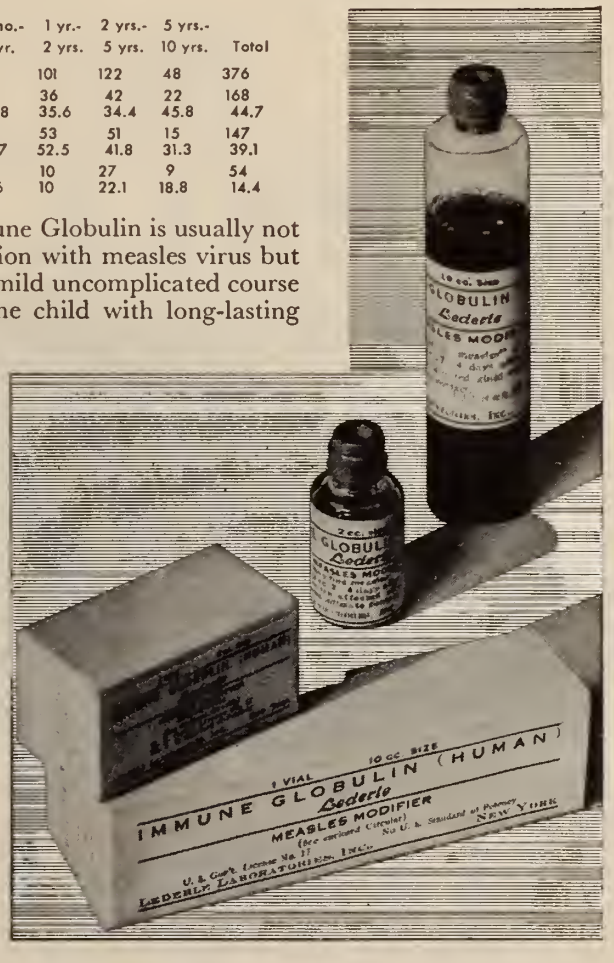
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Number given "Immune Globulin"	105	101	122	48	376
Did not get measles	68	36	42	22	168
Per cent	64.8	35.6	34.4	45.8	44.7
Developed milder measles	28	53	51	15	147
Per cent	26.7	52.5	41.8	31.3	39.1
Developed unmodified measles	8	10	27	9	54
Per cent	7.6	10	22.1	18.8	14.4

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